

The Dental Digest.

Vol. V.

CHICAGO, MAY, 1899.

No. 5.

Original Contributions.

POSSIBILITIES OF SOFT FOIL.

By G. S. JUNKERMAN, D.D.S., CINCINNATI. READ BEFORE FALLS CITY DENTAL CLUB AND LOUISVILLE ODONTOLOGICAL SOCIETY, AT LOUISVILLE, DEC. 19, 1898.

It is the duty of every professional man to take advantage of all materials and conditions that may present themselves in the practice of his profession. The man who uses gold only, cement only, or amalgam only, travels in a path of bigotry and stultification. The truly scientific man uses all these materials, and by thought, study and consideration fits them into the places where they should go, thereby fulfilling the ends of his profession and subserving the public to the fullest meaning of the word dentist. Likewise the man who prides himself on the exclusive use of hard foil and feels satisfied at the results obtained by it, becomes a bigot in his profession. It is the duty of every professional man not to be satisfied with partial results from any material, but he must make that material render up all of its virtues to his tact and skill.

Our forefathers used soft foil. They knew of no other, and great credit is due them for the partial results attained from its use. The present constituency of the profession has discovered annealed foil, and the majority have not only thrown aside the virtues observed by our forefathers, but have ignored the greater results that might be secured on account of the great progress of the profession and the greater skill which it now possesses. We are in the habit of speaking of the past age as that of soft foil and the present one as that of hard foil. In the opinion of the speaker this is the age of hard foil, but the real age of soft foil has not yet arrived. If the present progress and skill attained by the profession would be to-day applied to the manipulation of soft foil we should marvel at the results which would be secured. In former years the profession had not the teaching, instruments nor skill that it boasts of to-day; the soft foil that seemed awkward in the hands of the partially skilled profession would be converted into a material very nearly the acme

of perfection, a plastic possessing all the requisites for a perfect filling material. In order to fully comprehend the manipulation of soft foil it is necessary to understand the physical differences between it and annealed foil.

When gold is melted into an ingot preparatory to being beaten out into the various foils, it is in the annealed condition. It has first been melted and heated to a cherry-red color. After having partially undergone the process of beating it begins to depart from the annealed form to what we call the semi-cohesive form. In the next stage of the process of beating it has further departed from the annealed form and has finally become what we call soft or unannealed foil. The process through which it has gone from the first stage to the last stage is, from a physical standpoint, the pulling apart of its molecules, rendering cohesion less by comparison in the last stage than in the first. A solid is a body in which molecules have a fixed relation to each other, while a liquid is a body in which the molecules move freely upon each other. So by comparison, annealed foil is a solid body in which a greater amount of cohesion exists, while the soft gold is a plastic, or approaches a liquid in which cohesion has been decreased but not destroyed. If you now take the first form, which was annealed gold, and the last form, which we spoke of as soft gold, you will find two changes have occurred—in form and in cohesion. If you heat the last form to a cherry-red you change it back again into annealed foil, but you do not change the form. The result has been that the shaking up of the particles of gold in the last form by heating it to a cherry-red has produced such an activity in the molecules of the material that they have again come into close relationship with each other and the force of cohesion acts. Soft gold is not totally non-cohesive. To be so it must have been reduced to a fine powder.

Modeling compound or wax is made plastic by applying heat; gold is made plastic by the beating process. The results are the same, but the methods are different. Soft gold is in a liberal sense a plastic and by skilled hands can be manipulated very much the same as anyone manipulates cement or amalgam, the only difference being that it requires more skill to manipulate gold. Before the discovery of annealed foil it was customary to fill crown cavities in molars and bicuspid with soft foil. In other words, only cavities that had four walls were attempted by the majority of

dentists. I wish to show that it is not at all necessary to have four walls to fill with soft gold, and that soft gold can be used in putting in a number of varieties of contour fillings. The soft gold can be used in any case where we have two walls between which to pack. If the gold is properly packed it has sufficient edge strength and condensation and will not flake or break. Soft gold cannot be used for putting in contour fillings on the cutting edges of front teeth, for the simple reason that they have not the two walls between which the gold is packed; but it can be used for contours in molars and bicuspsids, and also in cases of centrals, laterals and cuspids, where the lingual or labial or both walls are gone.

In contour fillings the gold is inserted in exactly the same way as in crown fillings, the gold being laminated in the form of cylinders from within out. The condensation can be done either by hand pressure or mallet or both. Formerly it was necessary to have special instruments for the insertion of soft-gold fillings. I personally have learned that they can and should be inserted with the same instruments that we use for annealed foil. The methods of manipulation for this kind of foil are a little more difficult to learn, but they should not weigh in the balance when there is a demand on the part of the laity to be properly served by the profession. I contend that no man subserves the end of his profession who does not manipulate soft foil.

I anticipate the question as to how soft-foil fillings remain in contoured cavities. We spoke before of annealing or changing the cohesion of gold by heat, so we find after condensing with proper force a soft-foil filling that the gold is not in the same condition as when we inserted it. In other words, the gold by manipulating becomes what we call semi-cohesive and we have induced that cohesion in the soft-foil filling by use of the proper force upon it. Gold becomes annealed by lying in the sunshine, which is heat, which is force. It likewise becomes partially annealed under the force of mallet or hand pressure. I have seen soft-foil fillings so condensed and so much cohesion induced in them that it was possible to make annealed foil cohere to the surface of the soft foil.

Besides making a more perfect filling, there are other great ends attained by the use of this foil. Laparotomy or ovariectomy, removal of the tonsils, trephining of the cranium, amputation of the arms or legs, and many other operations are performed in anywhere from

three to twenty minutes by a surgeon. It is his pride to boast of the rapidity of the various operations he performs, and it is to be taken into consideration that most of these operations are performed while the patient is under an anesthetic. You very rarely hear a dentist boast of being rapid. An operation of his that should take only one-half hour is very often extended into two, three or four hours, and the dentist is forgetting all the time that he is operating on live tissues and telegraphing through the sensitive nerves of the human body at every blow of his little trip-hammer, as he tacks piece after piece of gold on the filling. The patient feels that it will never be finished, and begins to realize the deficiency of skill in the dental profession. It too frequently happens that patients despise their dentists, which arises from the pain endured under these long and tedious operations. There is a crying need for brief, successful and permanent operations. Should it not be acknowledged that that is the part of a skillful dentist to be rapid in his operations and should we not use all means that will promote that rapidity?

There is in the profession a great difference of opinion as to which is the best filling material. Some argue for gold, others that the plastics should be preferred. We all agree that gold possesses the greatest number of suitable qualities for a perfect filling material, but the difference of opinion arises from the detriments while placing this material in position, such as the breaking of margins, the time spent, and the danger to the tissues from the force necessary in inserting it. If we could imagine all of these difficulties overcome and the filling material in position in the cavity, we would agree that gold is the best filling material possessed by the profession to-day.

My long experience in teaching youths who have been under able preceptors, and have attended dental schools, and my contact with the profession, have convinced me that by far the greatest number of dentists are almost totally ignorant of the possibilities of soft foil. If this ignorance could be eradicated, I have no doubt that soft foil manipulated as a plastic would become the common ground upon which we could all meet, and that there would arise a unanimity of opinion that not only is gold the best material we have, but that it possesses nearly all of the qualities that are required. Any one skilled in its use can insert it wherever he could insert a plastic and in very nearly the same space of time. In conclusion, I will say

that perfect fillings, perfect adaptation to borders, rapid operations, contour fillings, less pain, more respect and consideration from our suffering patients, are a few of the possibilities of soft foil.

METHOD OF OBTAINING ACCURACY OF OCCLUSION IN CROWN AND BRIDGEWORK.

CLINIC BY DR. H. J. GOSLEE, CHICAGO, BEFORE FALLS CITY DENTAL CLUB
AND LOUISVILLE ODONTOLOGICAL SOCIETY, AT LOUISVILLE, DEC. 17, 1898.

Dr. Goslee's clinic comprised models, etc., showing his modification of the method of carving cusps in plaster previously molded into the form of occluding teeth, and making special dies of same for crown and bridgework.

After the band is fitted a bite is taken, followed by an impression. The model is procured, the bite adjusted to same and placed upon articulator. After separating, the surfaces of occluding teeth are varnished, the band filled with soft plaster, and articulator closed. After hardening, this plaster outline (contents of band) is carved into form of typical tooth, without interfering to any extent with the various points of occlusion. The imprint of cusps is then procured in a metal ring containing moldine, over which is placed a cap of German silver or hard rubber, having a flat base with a funnel-shaped cope, through the bottom of which is a small perforation. Watts metal is melted and poured into this cope and enough of it passes through perforation to fill the mold. The cusp button is then broken away, placed in position for running counter-die, coated with a deposit of carbon from a small piece of ignited gum-camphor, and counter-die of fusible metal secured. The cusp is then swaged between counter-die and cusp button and the latter can be preserved for further use.

In bridgework the same procedure applies. The abutments are made first and models within position are placed upon articulator. The facings for articulating dummies are selected, ground and backed, one pin of each being allowed to remain projecting in a crooked position. The facings are then held in position on model from buccal side, leaving backings exposed, against which soft plaster is now poured to receive imprint of occluding teeth. This plaster is held firmly in contact with facings, owing to pins being left as described, and is trimmed into desired forms of teeth represented. Dies are secured and cusps reproduced in metal (gold) with this

desirable feature—they can be swaged separately or collectively—two, three, or four in one piece. The time consumed is but little greater than that required in the selection of suitable cusps from any other system, and the results are more accurate.

THE CRIGLER REMOVABLE DENTURE.

BY IRA B. ARCHER, D.D.S., NORTH SAN JUAN, CAL.

While looking over some old copies of the DIGEST, I find in the January, 1897, issue a description by Dr. B. J. Cigrand of Dr. J. W. Crigler's methods and appliances. For the cases in hand they are certainly unique, practical and invaluable, and I know of no other denture so satisfactory to patient and operator.

By the necessities of a certain case in practice I was compelled to deviate somewhat from the Crigler method, the result being to my mind a decided step towards the cardinal principles of cleanliness, adaptation, articulation and mastication.

The patient was a lady of very nervous temperament, so that it was hard to perform a thorough operation of this kind for her. All four lower molars were absent, and the occlusion was exceedingly close. On the left side there was a quarter-inch space between the superior molars and the inferior alveolar ridge. On the right side the cusps of the superior molars slightly touched the ridge. There was remaining in the mouth the anterior root of the first molar, which the patient would not allow me to remove, and this added to the foregoing complications.

It was simply out of the question to attempt the grinding off of porcelain teeth with any certainty of articulation and sufficient masticating surface. Those who have tried to grind off a porcelain tooth to all the dips, spurs and angles of a well-formed natural molar, know how difficult and annoying a task it is to gain anything like a proper surface of mastication. The teeth are the millstones of the human body, and if the articulation is faulty the ultimate object of the appliance is defeated, namely, the trituration of food.

I made my crowns, attachments and complements as laid down by Dr. Crigler; struck up saddle for the respective ridges of 30-gauge platina-gold plate in the usual way; took accurate impression in plaster of superior molars, made model, varnished same, poured plaster on cusps, removed and trimmed tooth form (using a sharp penknife), varnished, pressed into moldine, and ran fusible metal die.

Then struck up continuous cusps, leaving long on lingual and buccal sides, touching saddle. By this method of forming cusps you obtain positive articulation and mastication. Ran sufficient solder in cusps and soldered bits of plate to cusps and saddle as retainers for rubber. Took impressions of mouth with crowns and complements in place, articulated and placed saddles on ridges, waxed and secured correct articulation.

At this stage of the proceedings I removed appliance and tried in mouth for verification. Then invested so that the crowns or cusps would pull off on opposite sides of flask, packed with rubber and vulcanized. You can invest the entire appliance, crown and all, but sometimes the rubber will flow between the complement and attachment on crown and necessitate extra labor, as well as danger in disengaging the parts. Best remove the denture when investing.

The denture can be made of metal throughout if so desired, but rubber simplifies the process, and in case of breakage of complement or bar is easily repaired.

These dentures were placed in mouth and found perfect in stability and articulation, and had no rolling or rocking during mastication. As the articulation was perfect, no alteration with corundum wheel or file was needed.

These dentures are not only very serviceable, but they look artistic and command a much higher fee. They can also be easily and quickly removed for cleaning at any time by the patient.

JACKET CROWN.

CLINIC BY DR. H. B. TILESTON, LOUISVILLE, BEFORE FALLS CITY DENTAL CLUB AND LOUISVILLE ODONTOLOGICAL SOC., AT LOUISVILLE, DEC. 17, 1898.

The crown is to be used as a dummy and is made either with a facing or a plain rubber tooth. Twenty-three karat gold can be used, gauge about 31. The gold is cut into a strip a little wider than the tooth to be jacketed and one end cut "on the bias." If a rubber tooth is used the pins are straightened by pinching the heads with pliers. A pin hole is now punched near the margin of the gold strip in the acute angle of the bias, and the tooth being held pins up, the gold is slipped over the right-hand pin. All being held firmly in the left hand, the gold is wrapped around the back of tooth, or rather the face of tooth, and while held thus the gold is marked for the scallop which will expose the porcelain face, being

careful not to make the scallop too deep, lest in the subsequent stretching the gold may be drawn beyond the end of the facing. Now cut this piece out with curved shears and file up smooth. Replace and press the gold against the other pin and punch a hole at the point marked by the pin point, and cut the strip again on the bias so the gold will overlap the other margin.

Replace and pinch the pins together, and holding the tooth with porcelain up, grasp the protruding gold firmly with a strong pair of pliers, and with force bend the gold back towards the pins, thus stretching the jacket tightly about the tooth. Cut off the surplus gold. Cut a piece of 20 k. solder long enough to cover the entire joint and bend the end at a right angle; hook this angle over the cut end of the jacket, the object being to insure the flowing of solder into the joint. Lay the tooth, porcelain down, in a bed of loose asbestos fibre, add borax, and with a broad flame melt the solder all at once and it will sink into the joint uniformly. The jacket can now be burnished close to the tooth and finished with a file. More solder can then be added if needed.

The method was not claimed to be original with Dr. Tileston, but was demonstrated because of the ease and quickness with which the dummy could be made, its artistic appearance, great strength and durability.

TEMPERAMENT AS INDICATED BY THE TEETH.

By C. H. NICHOLSON, D.D.S., ROCHESTER, N. Y. READ BEFORE THE ROCHESTER DENTAL SOCIETY DEC. 21, 1897.

To facilitate the study of the individual along more acceptable and scientific lines, the various temperaments have been for centuries grouped together so far as possible under four grand divisions, a study of which with their combination will give a careful observer a tolerably correct estimate of a person's character and disposition. In other words, what his natural bent is, or what he would be if his nature were allowed to assert itself regardless of moral training, social surroundings, domestic or commercial responsibilities and other similar influences constituting his environments which modify these and all other marks of individuality. Temperament should not be confounded with diathesis or idiosyncrasy. Temperament refers to the organization of the person, as provided by nature. Diathesis is either an inherited or acquired predisposition to certain

diseases or weaknesses. Temperament implies a physiological and diathesis a pathological condition. Idiosyncracies may be natural or inherited, and are developed or brought to prominence by some accidental or otherwise peculiar set of conditions aggravating that particular weakness, else they would lie dormant indefinitely and never be known. To put it in a concise form: "Temperament is that individual peculiarity of physical organization by which the manner of acting, feeling and thinking of every person is permanently affected."

The original classification of temperaments under four heads is attributed to Hippocrates and other Greek physiologists, who considered that those persons having a predominance in the body of blood, phlegm, yellow or black bile, were of sanguine, phlegmatic, choleric or melancholic temperament, according to the excess of the substance contained in the body which was supposed to influence their physical formation, health and disposition. On the fallacy of these ideas I will not take time to dwell, except to say that the universal adoption of these original divisions prevails, with some modifications, to the present day. The basic temperaments are now termed sanguine, lymphatic, bilious, and nervous.

It is considered that a person possessing an active vascular system, a strong, frequent and regular pulse, florid complexion, flaxen or light-brown hair, figure well developed and proportioned with a beauty of outline, a constitution not affected by slight diseases, with mental conception not acute, etc., is of a sanguine temperament. Such a person is of serene mind, takes things as he finds them, looking on the sunny side of life; but when once aroused he becomes intensely active and energetic, surmounting every difficulty.

The bilious temperament suggests strength and stability, stature medium and of firm build, active and energetic, complexion sallow, expression serious, hair and eyes dark or black, having quick and deep perceptions, with powers of reasoning and good judgment.

The lymphatic temperament is characterized by fullness of body or obesity, without grace or beauty of outline, features without marked expression. Persons of this temperament are contented and good-natured, sluggish in both mental and physical activity. We say "laugh and grow fat," but these people laugh and are fat because they cannot help it. Nature ordains it so.

The nature of the nervous temperament is suggested by the name.

Quick, energetic and highly organized, having artistic tastes and keen perceptions, skin fine and soft, complexion generally fair but not blond, hair fine and dark colored, are liable to be carried away by their feelings from one extreme to the other, either of great joy or depression, and will endure more physical exertion than their appearance would suggest, working until they drop. These are the people who wear out, not rust out.

Of course it is impossible that every person can be arranged in one of these four classes. Occasionally a person will be found answering pretty accurately to one of the basic temperaments, but it will be more frequently noticed that individuals possess characteristics common to more than one, and thus we have two or three-fold combinations.

Let us now proceed to consider this matter from a dental standpoint. Is temperament indicated by the teeth? If it is noticeable that the individual possesses features of a temperamental character capable of classification, it is quite as apparent to the dental observer that teeth possess characteristics of their own, sufficiently marked to enable them to be divided into distinct and separate classes. Who has not noticed the difference in color, strength, width, polish and quality of enamel, density and sensibility of dentin, festoon of the gum, etc., or the difference in the recuperative powers of the teeth, when so far as you could judge the conditions surrounding the case with its treatment would be identical? Who has not been puzzled by the difficulty of prognosis in an abscessed condition, basing his opinion on former experience and similar conditions? It has long been shown by observation that these different varieties of teeth correspond to the different temperaments in color, shape and structure, and that the pathological conditions peculiar to the various temperaments produce similar effects in the dental organs. As a natural sequence a practitioner having a thorough perception of the temperaments of the individual ought to be better able to intelligently treat the various cases under his care.

In this interesting theme of thought much advance has been made, but the subject does not receive the attention its importance demands, and is too readily shelved as a hobby, to be ridden only on special occasions. Taking a brief survey, we find that the teeth of the bilious temperament are apt to be strongly colored, being of a bronze-yellow, large and angular, rather longer than wide, neither

brilliant nor transparent, with slight translucency, gums heavy and firm with angular festoon, articulation closely locked, corners nearly square, with proximal surfaces in contact a considerable portion of the distance from the cutting edge upward. The arch is nearly flat from one cuspid to the other and the lines from this point backwards nearly straight. The dome of the palatine surface is high and nearly square, rugae heavy and of square formation, corresponding to the general outline.

In the sanguine we have a creamy-yellow color, beautifully rounded in proportion with well developed cusps, surfaces smooth, edges and cusps translucent, round and full festooned, set in a horse-shoe-shaped arch, dome high and round, with rugae numerous and graceful. The jaw being inclined to rotate in mastication, the teeth articulate edge to edge and are very often worn down to a level surface, the proximal surfaces being in contact about half their length.

The arch of the nervous is pointed like a gothic window, the incisors often overlapping, while the vault of the mouth is high and narrow. Articulation is not close. The teeth are pearl blue or gray in color, long and narrow, fine cutting edges and cusps, brilliant surfaces, transparent edges and set in beautifully festooned gums, corresponding in delicate tracery to this, the artistic temperament.

The lymphatic gives us the large unshapely tooth, of greater width than length, with cusps poorly defined and having an opaque, muddy color. The articulation is loose and flat and the gums thick, without beauty of outline. The arch is wide and semi-circular in form, and the roof of the mouth low and flat and not particularly marked with rugae.

Such then are the temperamental characteristics of the teeth, as belonging to the four primary divisions. Is all this of any importance or practical value to the busy dentist? Perhaps to the man who declines reading our best journals because they are too scientific, and to his kind, the study of temperament would have no practical value. But to the conscientious dentist, who has his patient's welfare at heart, and who studies esthetic effects in his operations, I think the importance of the subject is very great and much underestimated by most of our profession.

In considering the pathological conditions of the pulp, diagnosis

and prognosis would be materially aided by a thorough knowledge of temperamental influences. Those conditions existing in the system which would modify the progress of general disease, either assisting, or through a lack of good recuperative powers retarding the advance to health, would naturally produce the same effect in the cases which concern that highly organized structure, the dental pulp. In every lesion of tooth-structure sufficient to require treatment the consideration of the pulp of the tooth has some place, whether it be the amount of irritation caused by filling in an ordinary cavity, the proper substructures to be placed in deep cavities, or in actual exposure, or the various stages of inflammation which present themselves, the permanent results looked for are all more or less influenced by the temperamental characteristics of the individual, and indicate largely the proper treatment, whether of a therapeutic or manipulative character.

The operator would be justified in acting with a degree of boldness and assurance in dealing with the splendid recuperative powers and active organization of the sanguine individual, which he would not care to assume in handling a case, the physical conditions of which are practically the same, in the sluggish, inactive and degenerate tendencies of the lymphatic.

In a long and comparative list of the various combinations most frequently found, for dental purposes the bilio-sanguine should be placed at the head of that class which offers the heartiest response. In teeth of this combination the progress of caries is slow, the irritation gradually increases to a pronounced ache, which is however, easily allayed by a mild alkaline wash, or the application of some essential oil. They readily show toleration to a metal filling, and in capping an exposed pulp success is most often met with.

The sanguo-bilious presents a good combination also, but not so reliable as the foregoing. These teeth are strong and durable, responding nobly to efforts towards their restoration, fillings sometimes lasting a lifetime, giving the operator and patient entire satisfaction.

With the lymphatico-sanguine, "troubled water" is indicated and desirable results are not so confidently anticipated. A favorable feature of this class however, is that carious conditions are frequently isolated, the neighboring organs remaining intact, thus affording better opportunities for satisfactory termination of the treatment.

In cases of exposed pulp, the responsive powers of the sanguine are much modified by the soothing control of the lymphatic, but the tendency to inflammatory condition is strong and precautionary measures are indicated.

The peculiarities of the lymphatico-bilious combination indicate a sturdy resistance, which with the large size and strength of tooth structure often allows the production of more satisfactory results than would otherwise be looked for.

In the nervo-bilious we have the strong, polished enamel of the basic temperament, in combination with the highly organized, sensitive dentin of the nervous, producing large and painful cavities having pin-hole openings so often very deceptive, these cases being frequently more aggravated by the patient's almost insuperable dread of the dental chair. The need of skill and care, accompanied by delicate manipulation, is clearly indicated.

Nervo-sanguine, sanguo-lymphatic, bilio-nervous and sanguo-nervous, are styled doubtful and anxious. Lesions in these are persistent and hard to control, sometimes yielding to treatment for awhile, when a sudden change will occur, a new set of symptoms develop, so outspoken and obstinate in character as to ultimately require the extraction of the tooth, and so on down from one grade to another the special features of each being less favorable to the previous, until we come to the bilio-lymphatic and nervo-lymphatic, which classes possess the lowest vital features of all, and are eminently unsatisfactory in their response to treatment. The peculiar physical property of the individual, plainly declared in the teeth, fairly defies success, especially in cases of exposed or nearly exposed pulp.

From the foregoing it will be noted that the successful application of the laws of temperament to operative dentistry will necessarily imply a large amount of study and close observation, but if the subject be given the amount of attention which I have already claimed its importance deserves, so that it can be carried past the experimental stage, many anxious moments may be saved by speedily arriving at a proper conclusion of the final results of a course of treatment, with careful consideration of the temperamental characteristics of the individual.

In the field of prosthetic dentistry however, these laws seems to have a special usefulness, perhaps because their use or abuse is more readily observed, or it may be that in this department of our work

the same amount of detailed knowledge is not required for practical application. Be that as it may, so far as I have been able to observe it is too much neglected, and if it claimed more of our attention better results would not only be obtained for our patients, but the satisfaction of the operator would be increased, by placing him on the plane of the artist, instead of that of the mechanic.

We listen to many essays and read long articles on correct and scientific articulation, the vulcanizing of rubber, the true bite, and how to retain plates in the mouth, but hear and see too little of the esthetic in prosthetic dentistry. We succeed in making our plates stay in their places, and they answer very well for masticating. Some attention is paid to facial contour, but we receive too much undesirable advertising by the falseness of our false teeth. How noticeably offensive, even to the lay observer, is a set of beautiful creamy or tombstone-like white teeth in the possession of the bulky, flabby form, having the pallid, muddy complexion of the lymphatic temperament. The eternal fitness of things applies here in more senses than one. Each feature should be in harmony with the whole, and the truly artistic effect can be obtained only by a careful study of the temperament and general characteristics in reproducing a natural appearance in an edentulous mouth.

Discussion. Dr. White: Dr. Robt. Ivy, in the "American System of Dentistry," Vol. II, maintains that in the practice of prosthetic dentistry, where the natural organs are to be replaced by an artificial denture, a knowledge of the temperament is absolutely necessary. He also says, "By the combination of the various constitutional elements in various proportions the body is temperate, that element which is most in excess determining the temper, or temperament of the individual." Webster defines it as a "Peculiar physical and mental character." While I believe that the characteristics largely define the true character and temperament of the individual, so do I agree that the temperament is also truly indicated by the teeth. I believe the temperament is wholly and alone governed by the physical structure and general condition of the person, and that the many changes, such as habits, environments, business or domestic relations with which one is liable to meet, may bring about a complete and radical change of temperament.

Dr. I. C. Edington: While I admit that national characteristics are pronounced in the old-established governments of the world, as

a sequence of environments and heredity, I contend that in so comparatively new a country as our own, composed as it is of the elements of all the nations of the earth, which have not as yet settled into a fixed type, the subject of temperament presents greater complexity than in any other country. The predominant temperament in Germany is the sanguino-bilious; that of France, the nervo-bilious, and that of the other European nations can without difficulty be discerned, but what shall I say in regard to our own? Are we able to put our finger on any temperament or on any combination of temperaments and say, "This is distinctively American?"

"A perfect equilibrium," says Dr. James W. White, "of the different systems is rarely if ever presented in any individual." Since this is true with respect to the more settled races, how much greater is the departure from that "perfect equilibrium" among our own people. This fact not only makes diagnosis difficult to the superficial observer, but also renders prognosis uncertain; and I wish especially to commend that portion of the paper which brought before you the importance of prognosis. That it is of the highest moment cannot be gainsaid. Indeed, correct prognosis would be as beneficial to the patient as to the prognosticator. Experience has taught us that the treatment which in one case would be successful would in another be of little use, and perhaps be a positive injury, because of the difference of recuperative power.

OH DON'TS FOR ODONTOLOGISTS. Oh, don't pull the wrong tooth, especially if it is the only really good one the man has left.—Oh, don't put amalgam in a mal gum.—Oh, don't use sorghum for a sore gum. Sweets may be good, but fig or raisin will suffice.—Oh, don't talk the victim to death. Use the gas-bag.—Oh, don't tell the patient he has pyorrhea alveolaris. It will only make him feel worse.—Oh, don't tell a man he must have his tooth out because his dentin is too thin.—*Medical Record*.

PHYSICIAN MUST BE SILENT.—The New York Supreme Court has held, in a recent case, that a physician must obey the statute forbidding the disclosure of facts coming to his knowledge through his professional duties. A physician asked the court to aid him in the recovery of a large sum for services rendered a prominent woman and desired, in order to substantiate his claim, to disclose the nature of his professional services. The court refused to allow the testimony, and declared "it was right to throw the mantle of charity over the sick and unfortunate, to elevate the medical practitioner to the high plane with the clergy, leaving him to protect his fee according to professional ethics so long as he does not infringe the humanitarian sentiment embraced in the statutory prohibition."

Digests.

NOMA, PRECEDED BY LIENTERIA. By B. Littlepage, M.D., Clay City, Ky. I was called to see a boy four years old, very restless, high temperature, rapid pulse. He had been puny for some time and having "dumb chills," diarrhea for several weeks, no appetite, and what little he ate passed through him undigested. In a day or two I found my patient better, but in four days he was much worse. The mother directed my attention to a little sore on the upper gums between the front teeth, about the size of a pea. It did not look bad and was not tender. The sore enlarged very rapidly. I did everything I could think of to arrest its growth, but to no avail. The upper teeth dropped out one by one until all were gone; his upper lip then became involved, in a day or two gangrenous, tough like leather and perfectly dead, no feeling in it. I cut the lip away, using antiseptic dressings and washes. What little I left from the operation sloughed away down to the superior maxillary bone, about two inches up in the nose, but leaving it. It was one of the most ghastly sights I ever saw. The little fellow died about six weeks after we first noticed the sore. Will some one give us the correct diagnosis of this uncommon disease, and tell how he would have treated it?

[The occurrence of noma, or gangrene, preceded by lenteric diarrhea, is peculiar. This form of diarrhea is sometimes dependent upon tuberculosis of the bowels, and if this were so in the present instance the local disease may have been lupoid. But the rapid course opposes this view, and we are forced to look on it as malnutrition from the diarrhea, with total failure of the vitality of the tissues of the lips. For the lenteria, hydrochloric acid and pepsin should have been given with copper arsenite; the strength kept up by nuclein in full doses; the initial ulcer treated by stimulants such as turpentin; the first signs of gangrene destroyed by the cautery. —*Ed. Alkaloidal Clinic, April, 1899.*]

* * *

CANCER OF THE TONGUE. H. Küttner (*Quarterly Medical Journal*, October, 1898; *Beiträge z. Klin. Chir.*, Bd. xxi, Heft 3) has conducted several experiments upon the dead body with regard to the anatomy of the lymph vessels and lymph glands of the

tongue. His conclusions are as follows: The tongue is extraordinarily rich in lymphatics; the lymph from one-half of the tongue flows to the glands on both sides of the neck; the lymph vessels of the overlying mucous membrane and that of the deeper layers have the same outlet; the lymphatics are very numerous and form many anastomoses; the lymph glands of the tongue are the submaxillary glands, the deep cervical glands over the jugular veins, small lingual glands, and glands in the musculature of tongue which are placed between the genioglossi muscles. There are also direct lymph connections between the tongue and the supraclavicular glands. The final branch of the deep cervical glands can, at least on the left side, open directly into the great veins. The submental glands, the glands at the lower end of the parotid, and the superficial cervical glands do not receive lymph from the tongue, but one observation showed that they were connected with the deep cervical and submaxillary glands.

The salivary glands may become infected by direct invasion from contiguous lymphatic vessels or glands, and they may become infected by the blood-stream. In lingual cancer, as in mammary carcinoma, the glands should be looked upon as infected, and completely cleared out. The submaxillary, submental, and deep cervical glands on both sides should be removed, and clearing out should be extended even to the clavicle. If enlarged glands can be felt in the supraclavicular fossa, they should be removed.

Küttner recommends the following incisions: a median cut running from the chin to the sternum, and a somewhat concave incision running from the angle of one jaw across the hyoid bone to the angle of the jaw on the opposite side. Four flaps are thus formed which can be turned backwards.

* * *

BABOO ENGLISH. A Calcutta correspondent sends a specimen of "Baboo English." This speech was actually made before a civilian magistrate at Barisal a short time ago: "My learned friend, with mere wind from a teapot, thinks to browbeat me from my legs. But this is mere gorilla warfare. I stand under the shoes of my client, and only seek to place my bone of contention clearly in your honor's eye.

"My learned friend vainly runs amuck upon the sheet-anchors of my case. Your honor will be pleased enough to observe that my

client is a widow—a poor chap with one post-mortem son. A widow of this country, your honor will be pleased enough to observe, is not like a widow of your honor's country. A widow of this country is not able to eat more than one meal a day, or to wear clean clothes, or to look after a man. So my poor client has not such physis of mind as to be able to assault the lusty complainant. Yet she has been deprived of some of her more valuable leather—the leather of her nose.

"My learned friend has thrown only an argument *ad hominem* upon my teeth that my client's witnesses are all her own relations. But they are not near relations. Their relationship is only homeopathic. So the misty arguments of my learned friend will not hold water. At least, they will not hold good water. Then my learned friend has said that there is on the side of his client a respectable witness—namely, a pleader—and, since this witness is independent, so he should be believed. But your honor, with your honor's vast experience, is pleased enough to observe that truthfulness is not so plentiful as blackberries in this country. And I am sorry to say, though this witness is a man of my own feathers, that there are in my profession black sheep of every complexion, and some of them do not always speak gospel truth.

"Until the witness explains what has become of my client's nose leather he cannot be believed. He cannot be allowed to raise a castle in the air by beating upon a bush. So trusting in that administration of British justice on which the sun never sets, I close my case."—*London Sketch*.

* * *

INFECTION OF THE FACIAL AND CERVICAL LYMPHATIC GLANDS AS A RESULT OF DENTAL LESIONS. By Chas. B. Porter, D.D.S. Read before San Francisco Dental Association, Dec. 12, 1898. The patient came to me in August and stated that a month earlier a tooth had abscessed, and designated the right superior first molar. There was a large gold filling in the anterior occluso-approximal portion, faulty at the cervical border. The tooth was of normal color, but failed to give response to ice or to the hot blast from chip-blower.

The filling was removed and pulp-chamber entered with a bur and found to be absolutely empty and dry, as were the canals in the palatal and disto-buccal roots. The mesio-buccal root was impene-

trable beyond one-eighth inch, so was opened with fifty per cent solution of sulfuric acid and a small pulp-canal cleanser. No pus was met, but there was a strong odor of hydrogen sulfid. The usual treatments were made as indicated and the canals apparently rendered aseptic and filled with chloro-percha and the cavity filled with gutta-percha.

Two weeks later the patient returned with a small "lump" in the substance of the cheek, which was recognized as an inflamed lymphatic ganglion. The canals were at once opened by use of oil of eucalyptus and a cleanser and treatment resumed. The ganglion was at this time the size of a small bean and quite painful under pressure. Counter-irritation had no effect, and the patient being a homeopath was referred to her physician for constitutional treatment, without result. Artificial communication was obtained with the apices of the buccal roots and medicines forced through.

In the meantime the buccal ganglion had enlarged to the size and shape of a large almond, and the submaxillary ganglia had become involved and increased to the size of a hen's egg, and were very painful to pressure. A sinus developed opposite the disto-buccal root had closed and the gum became much swollen. No pus was found upon incision. Judging the abscessed roots to be the cause, and finding the conditions did not yield, the tooth was extracted and the roots found much absorbed. The socket was dressed and packed daily for several days, when the wound seemed to heal comfortably. To secure resolution of the ganglia a twenty per cent aqueous solution of ichthyol was applied to the inside of the cheek upon a lambs-wool tampon several times daily, but with little or no effect.

About a week since the gum appeared slightly inflamed and two sinuses developed. Under an injection of three per cent solution of eucain the gum was dissected back and a carious area exposed embracing the entire socket. The carious bone was removed with a large rose bur, the wound packed with iodoform gauze, and has since been washed out with pyrozone followed by listerine and packed daily, and seems to be progressing well. Meanwhile an ointment of ichthyol and lanolin has been applied externally to the swellings, being rubbed in, while more spread upon lintine is bound on and allowed to remain over night with apparently good effect.

Not having met the condition before, I have been interested in looking up reports of cases. Bodecker says in his Anatomy and

Pathology of the Teeth: "Inflammation of the lymph ganglia is most common in submaxillary region, always due to the transmission of infectious material through lymphatic vessels into the ganglia. There are persons who upon the slightest nonpurulent inflammation of the pulp or pericementum react with a swelling of the submaxillary ganglia. * * * Purulent pulpitis or pericementitis, with all the inflammatory complications dependent upon them, are invariably accompanied by a swelling and hardening of the lymphatic ganglia."

In spite of this apparent frequency of occurrence, I can find but few cases reported, in none of which the ganglia required other treatment than extraction of tooth or cure of abscess causing trouble.

As to the area involved, Bodecker says, referring to the above-quoted paragraph: "All this holds good only for infectious diseases of the lower jaw, while those of the upper jaw rarely affect the submaxillary ganglia." He makes no reference to affection of buccal, parotid or occipital ganglia. He says the condition is more common in youths under ten years than in persons of more advanced age, in whom it most frequently occurs during difficult eruptions of third molars or after their extraction, and that mild cases sometimes occur after an attempted extraction of a tooth or root.

Bearing upon the relation between the condition of the oral cavity and these ganglia, and the importance of early recognition and prompt removal of cause, and always of prophylaxis, I read an extract from a paper by Dr. W. H. Bergtold of Buffalo, entitled, "The Mouth as a Center of Infection." Of the lymphatics he says, "We must therefore recognize the fact that while reflex inflammatory processes in these ganglia rarely terminate in suppuration, there is always its possibility, particularly in children, all of whom have a tendency toward lymphatism; in some so marked as to deserve to be classed as a distinct diathesis, and active measures should be taken to check the inflammation and promote resolution whenever it manifests itself."—*Pacific Gazette, March, 1899.*

* * *

POSTURES OF THE HEAD IN ANESTHESIA. The writer of this editorial has endeavored in many ways within the past few years to bring before the profession the importance of maintaining the head in a proper position during the administration of an anesthetic, and while he does not wish to be considered as a too ardent

advocate of a given method, he sees this one so seldom used, yet when employed so valuable, that he believes it should be more widely utilized. At the present time the erroneous idea exists in the minds of many physicians that the proper attitude of the head when breathing becomes difficult or labored is that of extension backward; and supports are taken away so as to allow the head to fall backward or beyond the edge of the table. This stretches the anterior portions of the neck and without doubt opens the glottis and draws the epiglottis away from the glottic opening. Although this movement of the epiglottis is accomplished by this method, the soft palate is strapped across the dorsum of the tongue so that no air can be taken through the mouth, and the patient is forced to breathe entirely through the nose. The nose is theoretically the organ of inhalation, but too often it is obstructed by hypertrophied turbinated bones, by polypi, or by the secretions produced in large amount by the irritant vapors of the anesthetic, and as a result the patient, if required to breathe through the nose alone, will draw air into his lungs only with the greatest difficulty. On the other hand, if the head is thrown forward and at the same time the neck extended by drawing the head of the patient, lying prone on the table, toward the anesthetist, the epiglottis is drawn away from the glottic opening more effectively than in the position of backward extension, and the soft palate is not strapped over the tongue but is if anything far removed from it, with the result that the patient can breathe through the mouth as well as the nose. That this position of the head and neck is the correct one to obtain the easiest access of air to the chest is proved by removing the basilar process of the occipital bone in a cadaver, when the wide opening of the glottis and the epiglottis well carried away from it can be readily seen. Further, it will be remembered that the professional runner and the trotting-horse do not extend the neck and throw the head backward when they seek to get more air into the lungs, but they extend the neck and throw the chin and head forward as far as possible. This strengthens the air passages and gives free entrance to the air.

These views were advanced nearly ten years ago by Dr. Edward Martin and the writer, and we have found in practical experience that they are correct. If this posture can be maintained so long as breathing is labored much relief will be had.

The second point of importance is that the tongue should not be

drawn out and over the lower teeth, but outwards and slightly upwards. If this is done the traction is conveyed directly to the epiglottis, which is thereby removed from the glottic opening.—*Editorial in Therapeutic Gazette, April, 1899.*

* * *

CLINICAL STUDIES OF SOME SUPPURATIVE DISEASES OF THE MAXILLÆ. By Henry C. Boenning, M. D., Philadelphia. Read before the Academy of Stomatology, Dec. 27, 1898. From the point of construction the maxillæ are the most important bones of the face, inasmuch as they form a large part of the osseous framework of this part of the skeleton; but their greatest importance is due, of course, to the fact that they contain the teeth, and to their relations to important organs such as the eyes, nose, and mouth. A number of years ago, when my attention was first directed to the maxillary bones associated with suppuration, notably alveolar abscess and antral empyema, I observed that while a great number of these cases were being constantly treated at the dispensary, very few of them progressed towards a final successful issue, and still fewer were cured. The suppurative troubles were mostly recurrent, and though the diseases may have been modified and apparently cured, in a very little while the cases would again appear with a return of the original trouble.

In many of the specimens secured during my dissecting-room studies of these conditions, I found that the teeth had received very careful dental treatment, showing in many instances filling-material extending well down the pulp-canals. In almost every case of section upon suspected cases of alveolar abscess, and in many instances sections of the alveolar structures where no suspicion of alveolar abscess existed, I was rewarded by finding well-formed pus-cavities, in some of which the morbid appearances were not only interesting, but instructive to the highest degree.

In specimens of alveolar abscess where the lesions were marked there were present, at and near the extremity of the roots of the affected teeth, cavities of greater or less dimensions, filled in some instances with putrid pus, or pus undergoing caseous transformation, with flakes of carious bone, shreds of tissue, inspissated *débris*, and in several instances the apices of the roots were found roughened, eroded—in a word, necrotic. In these appearances, I concluded, lay the reason why even with careful treatment alveolar abscess

continues indefinitely as a chronic and recurrent disease. The pathological accumulations are retained within the abscess cavity in the substance of the bone, and although (as was shown by the appearance of the teeth in the sections) careful enlargement of the canals of the roots with the conventional treatment of the disease is practiced, the contents of the abscess cavities are of such character, substance and size that it is physically impossible to force them out of the small openings through the roots. When it is considered that such treatment involves sometimes the destruction of the normal nerve-supply of the tooth, the enlargement perhaps of the neural canal and of its apical opening, and that it is sought through the channel thus formed to discharge the contents of the alveolo-dental abscess, then, I say, the reason why such diseases are recurrent and seldom cured by this line of treatment is clearly apparent. How is it possible to discharge the contents of an alveolo-dental abscess through the minute canal ordinarily cleared for the purpose of tapping alveolar abscess, when the products that are to be discharged are, as a rule, many times larger than the canal which is formed for the purpose of the evacuation of the morbid material?

Following these examinations, or rather associated with them, I followed with great care the clinical service in our dental infirmary, and found as a rule that alveolar abscess was regarded as one of the most intractable of complaints, recurrent and unsatisfactory in many cases. I inquired very carefully at the dispensaries of other large dental schools, and the testimony was the same.

When nature opens an abscess in any part of the body, of course spontaneously, it results in a prompt cure *if the opening is sufficiently large*. It occurred to me that it has been the practice of surgery, when desiring to evacuate an acute abscess, and in fact any accumulation of pus (except such as occurs in the development of a cold abscess), to make a free, bold incision right down to the purulent accumulation, and thus at once discharge not only the pus, but the colonies of developing microorganisms, the infected material and *débris*, any necrotic masses, and everything incidental to the development of a disease of this kind.

I considered furthermore that it was the practice of surgery, in the treatment of abscesses associated with the osseous structures, to cut down upon the seat of pus-formation within the bone, and then by trephine or otherwise make an opening sufficiently large

to insure prompt, free and satisfactory discharge of the contents of such a cavity. I asked myself, why can we not apply the same rule of surgery to the treatment of alveolo-dental abscess? Why shall we temporize with any given case of alveolo-dental abscess, associated probably with a necrotic root, by attempting the discharge of the pus and other contents of the abscess cavity by a minute canal drilled through the root of the tooth, with little chance or hope of success, and often with the probability, if not assurance, of recurrence? Although alveolar abscess in the great majority of cases is preceded by death of the pulp, such is not invariably the case, but in these exceptional cases the pulp is by the conventional treatment destroyed of course.

Following my conviction in this matter, it became my plan to urge a radical treatment of alveolo-dental abscess. Instead of enlarging the pulp-canals and treating the abscess through them, I practiced opening into the abscess through the external alveolar plate. This operation is so very easily performed that it is readily practiced by every dental surgeon. I have found that the most satisfactory plan to follow is: first, to anesthetize the part or patient; next, to antisepticize the parts and then raise a periosteal flap from the external alveolar plate; the bone being exposed, put a clean bur of sufficient size in the holder of the surgical engine and drill directly into the alveolar abscess, then completely remove the contents; all of the accumulated *débris* and, if such be the case, the necrotic extremity of the root should be removed. Not that I would ask you to forego treatment through the root-canals whenever alveolar abscess occurs; not at all. In fact, be sure and put the affected tooth in the best possible condition after opening and thoroughly discharging the abscess through the external alveolar plate, but do this first. In alveolo-dental abscess there is not simply a pus-formation at the apex of a root and infection of the contiguous structures, but there is at the same time infiltration of pyogenic microorganisms and their products throughout the entire soft structures in the proximity of the abscess cavity.

Basing my opinion upon experience, I think that the most satisfactory treatment of this affection is an external opening into the abscess cavity by means of a bur from one-eighth to one-quarter of an inch in diameter; next, thorough antiseptics of the abscess cavity; then proper sterilization of the pulp-canals and filling of same; and

then packing the abscess cavity with iodoform gauze or other dressing, leaving the opening through the external alveolar plate lightly covered by the pendent fold formed by the periosteal flap. This becomes attached and very soon the wound closes.

What manner of objection can be urged against such surgery as this? None whatever; it is a line of treatment which nature not infrequently adopts. How often do we see infected otitis and periostitis followed by softening of the bone and caries, even necroses, the development of large abscesses in the overlying soft structures, and unsightly sinuses presenting at some part of the face external to, and sometimes at a very considerable distance from the seat of the disease? It is the line of treatment which is entirely in harmony with that practiced by every advanced surgeon for the treatment of abscess in other parts of the human body. There is but a single exception to the treatment of any abscess by a full, free, large opening, and that is *cold abscess* associated, let us say, with deep-seated structures, as with the bodies of the vertebræ. Here, of course, we can understand why great care and measures involving the smallest kind of an opening are imperatively required. Tubercular or cold abscess, as for instance, psoas abscess, is due primarily to the action of the bacillus tuberculosis, and only to a certain degree to certain pyogenic microorganisms. It is different in its nature and its course from an acute or a chronic abscess, or any pus-formation which can be compared to an ordinary alveolar abscess. To open a psoas abscess, or a cold abscess, where the greater part of the sac is concealed and beyond our reach, by a large, free opening, might simply allow the entry of germs or putrefaction and decomposition, and result in the formation of such toxins as would destroy the individual. Surgical annals afford many illustrations of the truth of this statement.

Such an abscess, however, may occur in the alveolar structures, but it is then limited and may require the same treatment as has been laid down for ordinary alveolar abscess. In fact, cold abscess in the alveolar regions can occur, but as has been said, the treatment, owing to its accessibility and superficial character, requires a free opening and thorough evacuation and curetment.

The treatment ordinarily followed for the cure of antral empyema has generally been the removal of a molar, diseased or otherwise, and then through some convenient socket perforation of the

floor and irrigation of the antrum. Who that has had large experience does not remember numerous cases of chronic antral disease that have been recurrent through a period of many years? The case-book at my clinic will give the accurate details of a number of cases of antral empyema which have existed anywhere from two to twenty years, during all that time having been under the treatment of numerous dental practitioners.

Following the thought laid down in the discussion of the treatment of alveolo-dental abscess, it occurred to me years ago that if we desired to cure antral abscess, so-called, we must establish an opening sufficiently large to thoroughly evacuate the antral cavity, to clear out the putrid material, to curet the carious walls of the antrum, to remove all diseased structures and all pathological masses, and completely discharge the contents of the antrum, which I have repeatedly found consisted not only of pus, but of *débris* and necrotic substances of a fibrous and osseous nature. The practice sometimes pursued, in fact, I regret to say, very often pursued—to extract a firm tooth, often a sound tooth, and then perforate the floor of the antrum of Highmore—is reprehensible in the extreme. In fact, it is an unjustifiable proceeding to sacrifice a useful dental organ, and in the great majority of cases to no purpose, for in almost every case that I have seen where this line of treatment has been followed in the attempt to cure a case of antral empyema, the opening was entirely inadequate to discharge the contents of the diseased cavity and to admit of satisfactory after-treatment. It has been our practice in the treatment of suppurative diseases of the antrum, especially where they have been of long standing, to raise the soft structures from the anterior antral wall, and then by means of a trephine in the surgical engine make an opening in the antrum large enough to insert the end of the index-finger. Some time ago an eminent member of your profession was present at my clinic and witnessed the operation of trephining the antral wall. He expressed himself as being amazed at the practice of opening the antrum heroically for antral empyema, but his amazement turned to strong commendation when I took out of that diseased antrum, which had been the subject of treatment for over three years, a nodule of inspissated pus and *débris* which was quite as large as a small marble; and when I dislodged, by the lightest touch, a flake of bone larger than a finger-nail, and demonstrated that this flake of bone

was not only necrosed but black as the result of long retention, he publicly stated that what he had witnessed had forever changed his views on the treatment of long-continued cases of this kind.

Such facts as these are not so widely known by the dental profession as they should be, but we have established them now in a number of operations, especially within the last three years, and I am to-day prepared to say that it is my belief that the safest and most satisfactory operation for chronic antral abscess is this large anterior opening directly into that cavity, removal of all pathological masses, the satisfactory irrigation and after-treatment, and, what is invaluable to the patient, no manner of disturbance of dental arch.

A few suggestions associated with the after-treatment of these cases is of prime importance. In the first place it is imperatively required to keep the parts antiseptically clean, so as to prevent the accumulation of any discharges or foreign materials. If absolute surgical cleanliness is not observed following this operation, you may have reinfection of the bone and progressive devitalization until a great portion of the maxilla is involved in the process of softening, caries, necrosis and destruction. The antral cavity must be kept carefully packed and everything done to establish asepsis. In from four to six weeks after the operation the cavity is, as a rule, filled, and, with the extreme care we apply in our after-treatment, I do not recall a single failure to cure antral empyema.

In treating cases of recurrent alveolar disease, as well as cases of chronic antral empyema, we shall continue perforation of the bone into the abscess cavity, thereby insuring the cure of the case and the retention of the dental organs in as perfect a condition as the exigencies of the case will allow.—*International, March, 1899.*

* * *

TEACHING CAVITY PREPARATION. By C. N. Johnson, D.D.S., Chicago. Read before the National School of Dental Technicians, at Cincinnati, Dec. 28, 1898. As a preface to this paper, it may be briefly stated that really the best method of teaching cavity preparation is one which with our present conditions is wholly impracticable. To teach cavity preparation to the greatest advantage we must first suppose a teacher who is himself an expert operator, and has the ability to impart his knowledge to others. Then he must take the student to the chair and show him a certain cavity in a tooth, which he must prepare in the presence of the student, with

a running comment on his work and the reasons why he pursues each line of procedure. This should be done with all classes of cavities of varying extent. Then the student should take the instrument and follow out a similar line of work under the direct supervision of the teacher, who should remain constantly at his elbow to correct any misdirected efforts, and make timely suggestions for improvement. This, with a continual cultivation and development of the student's judgment as to decisions in unusual cases, would round out a reasonably effective course of teaching cavity preparation.

But our present abnormally sized classes, and our limited teaching material of the right sort, would seem to render such a system entirely visionary. The nearest we can come to it is to give in the lecture-room and in the technic-room the most definite and systematic instruction in the principles of cavity formation, and then supplement this with such demonstration as we can secure in the infirmary. The purpose of the present paper is to treat only of cavity teaching in the lecture-room, leaving for others more competent the consideration of the question from the point of view of the technic-room and infirmary.

To lecture to an average class successfully requires several things. First, the lecturer must be a natural teacher—one with the instructive instinct. He must learn to be vivid in his descriptions and quick to detect any lapse on the part of his class either in attention or understanding. He must be magnetic enough to hold his entire class as one man, and to this end must possess the ready wit to vary the nature of his discourse whenever occasion requires. For instance, if he detects in his class or in any member of it the slightest lack of interest, he must be prepared to suddenly change the order of his descriptions so as to instantly rivet attention to what he is saying. He must be apt in illustration, so that in describing any particular thing his word-painting will carry the idea vividly to the mind of the student. He must be seriously in earnest and have a high appreciation of the responsibility resting upon him in his relation to the young men entering the profession. He must weigh his words well, to the end that false doctrine be not spread broadcast as the result of his teaching. There is one thing he must not do. He must not go before his class with a cut-and-dried dissertation, and present it in a formal and perfunctory manner, as if he were preach-

ing a prepared sermon. The day of set and solemn lecturing is past. If the teacher wishes to accomplish the greatest good for his class, he must put the very breath of life in his work, and in doing this must have diversity of method in presenting the subject. He must repeat the same idea in several different ways to be assured that it is perfectly understood by all. A lecture which would read well in print is not the most effective for class work. The teacher should aim to impart to the students his ideas and not his words, so that they may gain an intelligent comprehension of the essence of the matter rather than acquire a parrot-like repetition. In short, he should compel them to think.

In lecturing on cavity preparation the necessary adjuncts relate to charts, drawings and models, and these should be supplemented as occasion demands by blackboard illustration made off-hand by the lecturer before the class. If he can not illustrate in this way, he would better learn how.

The first thing to make prominent before the mind of the student in teaching the preparation of any cavity is the marginal outline. This can ordinarily be done best with drawings hung prominently before the class. It has seemed to the essayist that the most vivid presentation of this feature is gained by making a picture of a certain surface of the tooth under consideration, with a typical cavity of decay indicated upon it. Then let the lecturer raise the question as to what caused this tooth to decay in this particular locality, and go on to a consideration of the general subject of the location of caries on the different surfaces. The teacher should arrest the attention of the student at every point possible, to make him reason from cause to effect. Then upon the drawing he may indicate the points most susceptible to a recurrence of decay around such a filling and show the proper marginal outline to prevent this recurrence. This fixes in the mind of the student an intelligent conception of extension for prevention. He must be given a clear idea of the reasons why decay recurs at the points indicated, and to this end he should be directed to study the anatomical relations of these parts in the mouth. In fact, he should frequently be referred to the mouth for observation in corroboration of any line of procedure suggested, so that the teaching of the lecture-room may have as largely as possible a practical bearing.

When the marginal outline is understood, attention should be

directed to the formation of the cavity walls for anchorage. At this point models should be largely substituted for drawings. They should be of sufficient size for the class to see them, and yet not so unwieldy as to prevent ready handling. Typical cavities should be cut in them and the form of each cavity wall taken up in detail.

In this connection it is well for the teacher to note the fact that he is expected to accomplish two things for his class. He must vividly imprint on their minds the exact form of these walls—this must be firmly fixed with each member of the class. But that is not all. The student must have not only an intelligent idea of cavity forms, but he must be taught how to describe them to the minutest detail in clear-cut, definite terms. Some students are quick to comprehend verbal descriptions, and to apply them to models and to teeth, and they are also apt in describing cavity forms themselves, so that they are intelligible to others. But a very large per cent of those we are called upon to teach require iteration and reiteration in order to understand a given thing themselves, and then they need special instruction to qualify them to describe it so that others may understand it.

In a somewhat close study of the effects of various methods of teaching cavity formation to students, it has seemed to the essayist that the best results for the average heterogeneous class are to be obtained by a course something like the following—if the Association will pardon so minute and pedagogical a statement of method: Having the model with the prepared cavity held before the class, the teacher points to the wall under consideration, say the gingival (or cervical) wall of an occluso-proximal cavity in an upper bicuspid, and says: "This wall should be formed at right angles with the long axis of the tooth. It should be made horizontal buccolingually and mesio-distally, so as to present a flat base for the filling to rest upon." Then turning from the model and riveting the attention of the class by some appropriate gesture, the teacher should restate the matter in another and more descriptive form, ignoring the model entirely and using slow, definite and forceful language, somewhat like this: "The cervical wall of an occluso-proximal cavity in an upper bicuspid should be formed at right angles, etc." Then give the reasons.

This plan of procedure accomplishes several things. The first act of pointing to the cervical wall in the model definitely locates in

the mind of the dullest student the precise wall under consideration. It does it at once, without any possibility of mistake, and without the necessity for him to take any time to locate the wall from verbal description. All students should of course be taught to locate precisely any point of a given cavity from verbal description, but all students are not able to do it with sufficient readiness at the outset to make it judicious to ignore models in this connection. If a student is obliged to pause, even for an instant, to locate a wall mentioned by the lecturer, he is practically lost, so far as that description is concerned, because the lecturer is well into the description before the student gets his bearings. With the wall pointed out to him, he is at once free to follow every word of the description.

Then the first statement of this description practically repeats the same idea in three different ways. The wall should be "at right angles with the long axis of the tooth," it should be "horizontal," and it should have a "flat base." This matter of repeating the same idea several times in different language has seemed to the essayist to be of very great importance in lecturing to a large class of students of varying intellects and varying degrees of perception. What one student will grasp in one form may be entirely blank to another, while a different statement of the same idea might be illy understood by the first one and readily caught by the second. It is seldom that a single statement, no matter how definitely made, will be equally interpreted by all. At least it will not be so interpreted at that particular moment. If we wish to teach by rule of thumb whereby the lecturer should make a certain statement and have the class copy it in their note-books, to be subsequently learned by rote, then a single wording of that statement might do, but this is precisely what we do not want. Above all things we must avoid making parrots of our boys. We must make of them reasoning, thinking, logical human beings, and in order to do this we must get at their understanding and force the idea of the thing clearly into their minds before we concern ourselves much with the wording as it relates to their point of view.

And yet the wording from their point of view is a very important matter. As has just been stated, a student must not only be taught a thing, but must know how to describe it in clear and unmistakable language. This is why it is advised to turn away from the model after a clear conception of the form of the cavity wall has been im-

printed on the minds of the class, and give a comprehensive description in slow, measured phraseology, as if the model were not at hand for illustration. The teacher must watch his class carefully and study the varying expressions of countenance presented to him, so that he may be able to determine accurately whether or not he is being fully understood by all. If his quick perception shows him that there is the possibility of the slightest confusion in the mind of any member of the class as to a perfect comprehension of the points just made, he should not hesitate to repeat in slow, measured tones that part of the description which may seem necessary to clear it up, and if he is still in doubt, it is often well to pause in the lecture and make a request that questions be asked the lecturer on any points not perfectly understood. These questions on the part of members of the class often lead to a clearer elucidation of the points under discussion than would have been possible without them.

If each wall of each cavity be taken up in this detailed manner, and then a clear idea given of the relation of the different walls one to the other, it will eventually give a reasonably adequate understanding of general cavity formation. This matter of calling attention to the relation of one wall to another is important. It seems at once to fix in the mind of the student not only the direction of the different walls and the general form of the cavity, but also gives a clear idea of anchorage.

As to the best method of stating this relationship between walls, it has seemed to the essayist in recent years that the readiest comprehension on the part of the student was gained by a quite general use of the term "angle." This term appears to carry to the mind of the average listener a more definite understanding than any other form of descriptive wording. If we say to a student that the cervical wall should join the axial wall at right angles, he seems instantly to grasp the idea, and it also carries with it something of the form of the cavity in that region. We may use the terms "right angle," "acute angle," or "obtuse angle," if the case should require, and if perchance we do not believe in angles at all between walls, we may say that instead of such and such a wall joining another at a right angle, it should join it on a short curve or a gradual curve. The fact of mentioning an angle seems to convey a vivid picture to the mind, and in the experience of the essayist at least, it has proved of the greatest utility in cavity description.

When the cavity walls are described and the problem of anchorage thereby adequately considered, the question of the enamel margins must be taken up and treated in the same detailed manner—with the reasons for the particular form advised.

The student now should know what the finished product is to be, but what he does not know is how to produce it. In other words, he does not understand the technique, and this is the next and final step in teaching cavity preparation. The lecturer should go back to the formation of the marginal outlines and give different methods of instrumentation for extending cavities, for forming walls, and for preparing enamel margins.

This question of technique is one of the most difficult phases of the whole subject to deal with. The reason for this lies in the fact that the matter of personal equation enters so largely into its practical application. The most—or rather the best—that a lecturer can do, is to give several methods of doing the same thing, with the pros and cons of each method. It will scarcely do to stand before a class of students and outline any one method and say to them that this method shall be followed in all cases. No operator in practice can invariably follow any one method to the exclusion of others and do his patients justice. It is true the teaching of the past has been faulty because of the fact that for the most part little attempt has been made to formulate any method. The student has thus been left to his own resources, with the inevitable result that he has approached his work in a haphazard, indefinite manner, wholly devoid of system. The idea of system must be impressed upon the class, to the end that even if the students cannot find it in their fingers to follow the methods taught by the teacher, they will at least formulate some method and pursue their work systematically.

One last office remains in the teaching of cavity preparation. It is supposed that the lecturer has given his students the form of cavity in the different classes which to his mind is the nearest possible to the ideal. It would be well were it feasible always to attain the ideal in practice, but unfortunately this cannot be done, and unless this fact is made prominent to the student, he is certain to encounter a grievous disappointment when he approaches a patient to carry out the teachings of the lecture-room. Nothing will sooner tend to undermine the confidence of a student in his teacher than to find his methods incapable of practical application in any large per cent of

cases presented for his early operations. A student cannot be expected to so control his patient as to be able to accomplish ideal results in anything like the number of cases that an experienced practitioner can, and all of these considerations must be made clear in order to send the student to his work with an intelligent conception, not only of his possibilities, but of his limitations as well. The ideal should be held before him at all times as something to strive for, and he must be taught not to content himself with anything short of the ideal, unless for good and sufficient reasons. But to neglect to tell him that the ideal cannot always be attained is to invite a subsequent distrust which will seriously jeopardize the teacher's influence.—*Ind. Jour. May, 1899.*

* * *

TWO TEETH WHICH PRESENTED UNUSUAL, DISEASED CONDITIONS. By Mr. Charles S. Tomes, London. Read before Odontological Society, of Great Britain, April, 1899. The first was one which was only in a moderate degree carious. It had resisted all treatment and became more and more loose and painful, until at last it was extracted. The patient was a young lady enjoying fair health. An examination of the mouth revealed very little; a few teeth were below the normal standard of firmness, and one in particular was tender in its socket, but as that was apparently a dead tooth little could be inferred as to its condition. At a first glance the tooth did not present any very striking peculiarity. But upon making a section through the tooth in its long axis, it was apparent even to the naked eye that there was an altogether unusual condition present. The crown of the tooth so far down as the neck was perfectly normal, and the pulp-cavity was seen in section. But below the neck the dentin was represented only by a thin layer on the outside, which however, thinned out as it went downwards, so that on the one side it reached only a short distance below the pulp-cavity, while on the other it reached two-thirds of the length of the root. The whole interior of the root portion was solid, no trace of pulp-cavity extending down the roots in the form of root-canals being visible. On microscopic examination it was found to be a coarse calcified tissue, with a concentric arrangement round numerous small areas, and with a good many large spaces which were of lacunal character. The cementum was entirely absent over the portion composed of the coarse tissue. Towards the dentin in the

interior of the tooth it everywhere presented those festooned outlines which were characteristic of absorption. Two hypotheses presented themselves to Mr. Tomes: one, that it was the original structural formation of the tooth; the other, that the tooth was originally normally formed, and that the substitution for the normal tissues of the coarse calcification was a subsequent process—the result of disease. A careful study of the conditions rendered it almost certain that the latter was the true hypothesis. At one period there must have been a mass of soft tissue which had been modeled by the persistence of tooth socket below and towards the upper part by a shell of dentin into exactly the old form of the roots of tooth that had swept away even the cementum and had itself undergone a coarse and rapid calcification, reproducing in a new tissue the old form.

The second tooth might almost be described as an earlier stage of the same disease. It was a lower third molar, and as great pain was complained of by the patient, it was extracted. None of the appearances of caries was discovered by microscopic examination, but the walls of the cavity were festooned by the lacunæ of Howship, and in many places there was distinct calcification of the absorbent tissue. In that tooth, as in the other, Mr. Tomes thought it was obvious from the resistance to absorption afforded by the walls of the pulp-cavity, which resulted in the leaving of a thin skin of dentin round it, that the pulp was alive while the absorption was going on. It presented resemblances to a specimen described before the society by Mr. Colyer, but with the difference that in this case the bone was formed not inside the pulp-cavity but in an excavation outside it. It was noteworthy that in neither case had the pulp, although very nearly approached, made much attempt to protect itself by the formation of secondary dentin.

Replying to questions raised in the course of a short discussion, Mr. Tomes admitted that small cavities were not very uncommon, and that they would pass, unless looked at with particular care, as incipient caries. He had found some shrunken red stuff in one or two places in the cavity which might have been the remains of soft tissue. In one case there was no redness about the tooth and it was not tender to pressure, its appearance being in fact absolutely normal. He thought it was probable that the pain was in the pulp. In the first case there was great tenderness in the socket, but it was difficult to say whether the pain was in the socket or in the pulp. In the

case of the first tooth, absorption and deposition were going on simultaneously in different portions of the mass; but in the other case he considered that the absorption must have gone on almost completely before any redeposition took place. The cases might throw some light on the subject of ankylosis, but there was the remarkable circumstance that in the first tooth there was no ankylosis, but the socket of the tooth served to mould the new growth into the shape of the old tooth.—*Jour. Brit. Dent. Assn., April, 1899.*

* * *

DENTAL ASPECT OF PHOSPHORUS NECROSIS. By Dr. Cunningham. Read before American Dental Society of Europe, meeting of 1898. One feature of this question has not yet been sufficiently advanced or brought to the notice of the authorities. I think from my experience that that is also true as regards other countries, but certainly so far as this country is concerned. A great many years ago we had a tremendous investigation, and the great Dr. Bristowe made a report for the Privy Council, in which he mentioned all the cases of the so-called phossy jaw. I believe there were six cases mentioned in the report. Since that time there has been a tremendous change. First, there has been a change in our knowledge with regard to bacteriology. Second, a change has taken place in what the dentist can do for the individual in the way of preventing caries. And inasmuch as there is that other point with regard to the hygiene of the mouth, we may take it for granted there is the question of the use of yellow phosphorus. Every one thinks it is a simple thing to say, "We will use red phosphorus and then there will be no phosphorus necrosis or phossy jaw." There is a good reason why it is a disadvantage to use red phosphorus. First, when you carry a red phosphorus match it means that you must carry something on which to strike it. Human nature demands that it shall have a strike-anywhere match. If you study human nature from a matchmaker's point of view, you will find characteristics and the habits with regard to human nature are almost identical. Here we have a band of philanthropists joined together in making a tremendous outcry, especially with regard to Bryant & May's works. Unfortunately Bryant & May, who use this yellow phosphorus, have an enormous factory, and to them it is perfectly clear that matches which would light not only on the box but anywhere, would have a much larger sale. I believe they sell

about thirty thousand of one to two thousand of the other. The consequence is, that if the philanthropists who are working for the matchmakers have their way they will, in saving a small percentage of human suffering—which we all desire and which must and can be done, but in order to do it they only see one way, and that is to get rid of the yellow phosphorus—they will simply take away the livelihood of a large number of people. I am not talking in the interest of the capitalists, and I hold no brief for Messrs. Bryant & May, but I am talking in the interests of the work for men and women. They would lose and be deprived of an employment for which they have been trained for years. All we want to do is to make it safe. On the question of hygiene, the use of yellow phosphorus may be made safe if adequate precautions are taken. The adequate precautions must first of all be with regard to hygiene and ventilation. The ventilation can be made perfect. In Bryant & May's there are points which demand correction. With regard to the hygiene of the individual, it was a long time before the matchmakers could be induced to wash their hands. Now they are obliged to wash their hands before leaving their work, and also before having their meals; and they are obliged to take their meals outside the factory. The difficulty now is how to persuade them to clean the mouth. The right thing to do is to appoint qualified dental practitioners to see that there are no carious teeth. Surgeons do not understand this question of dental hygiene. The point is there should be no carious teeth in the factory, and then you will have no phosphorus necrosis. If you ask what is the difference between the bones in the face and the other bones of the body, I say none, except that they have teeth in them; which latter have channels and a means of access by which the phosphorus can get at the material in the bone itself. Therefore if you stop up the channel and prevent the access, you will have no phossy jaw. The men who make the phosphorus do not suffer, but the matchmaker does get the disease; and it is no different from the necrosis that occurs from other causes. Therefore I say if we stop that and cure these cases of caries, we get rid of the disease.

With regard to the economic points, which are of great importance, you can see there is something to be said, and it is an important thing to keep up this use of yellow phosphorus if it can be done with safety. I will ask those who are working in other

countries where phosphorus is used, whether dentists are appointed to inspect the workers' teeth. We have had dentists appointed to the match-making factories in France. The results have not been altogether satisfactory; there have been great battles of a political character. As a matter of fact, they have succeeded only in getting an examination of the workmen's teeth by bringing in the gendarmes. The only thing they do is to make them have the teeth extracted. They call it voluntary, but to workmen it means that they must either have it done or leave. They take out all the teeth. I submit that no state ought to permit such extraction, and there is no necessity for it. They ought to see what the dentists can do. They must be called in in a higher capacity, namely, to prevent those conditions that demand the extraction of the teeth.

Another point with regard to hygiene. I may say this, they have succeeded in eradicating phosphorus necrosis in France in a factory heretofore having a bad reputation. They have done it by this method of extraction. At Aix they have built a new factory; have taken in young workmen and have trained them in match-making; and they have a regular inspection to which no one objects to submit, and the teeth are taken care of; and I am assured that there are no persons with carious teeth allowed to work in the factory. They have been running since 1892 and they have had no phosphorus necrosis, and I do not believe they will. It is an important point, and I think you will be glad to know that our government has taken up this question, and has regarded it from the dental and not from the medical point of view.—*Cosmos, April, 1899.*

* * *

SUPERNUMERARY TEETH. By Mr. N. Bartlett, London. Supernumerary teeth have been defined as teeth in excess of the normal dentition, and although this is undoubtedly correct, yet cases may occur in which supernumerary teeth are present and still the number not be at all exceeded, as for instance—A supernumerary may be situated over a normal tooth and prevent its eruption; or there may be an excess of teeth in one region, accompanied by a corresponding diminution in another.

Although met with in any part of the mouth, they are of more frequent occurrence in those regions where suppression of members from the typical mammalian dentition has happened, though this

hardly serves to explain their much greater frequency in the maxilla than in the mandible; or, as in some cases, the presence of larger numbers of supernumerary teeth than the full mammalian dentition would possibly account for. I refer to the case of Mr. Handley, in which there were no less than six upper bicuspid on one side; and to a case recorded by Mr. Tomes, where there were incisors $\frac{5}{4}$, and molars $\frac{3}{4}$ on the left side; a brother of this patient having incisors $\frac{4}{4}$, and a grandmother, incisors $\frac{3}{4}$.

Supernumerary teeth are almost invariably single-rooted—Mr. Tomes says he has never yet met with one having a divided root. The roots are often stunted and malformed, and are usually matured and erupted before those normal to the region in which they occur.

By no means do they always appear singly, and when two are present their commonest situation is in the palate. They are frequently a cause of very considerable displacement of the normal teeth, by either being close to or actually occupying the place where in the natural course of events they would erupt. Separation of the upper central incisors is sometimes due to an unerupted supernumerary, and the X-ray is then useful for diagnosis.

Supernumerary teeth may in shape so closely resemble those of the region in which they occur as to render it at times a matter of difficulty or perhaps impossibility to determine which are the actual members of the series and which are not. On the other hand they may bear not the least resemblance to any human teeth at all, and may present an infinity of varieties, some of them not unlike the more regular of the contents of compound follicular odontomes.

Thus in the consideration of these two types, so far as shape goes so clearly defined, several authorities have been induced to apply a distinctive appellation to each, designating those normal in shape by the term "supplemental," and confining the term "supernumerary" only to those of the irregular shape; though it is apparent that any such distinction must be merely arbitrary, and that the words supplemental and supernumerary are synonymous terms, and do not in the least convey an idea as to the difference of their present application.

Supplemental Teeth.—The commonest situation for supplemental teeth is in the region of the upper lateral incisors, though it is by no means an uncommon occurrence to meet with them in corresponding regions of the mandible. The teeth resemble incisors, and may be

in front of or behind the normal members. Seldom are they the same size as the laterals, and the condition is often bilaterally symmetrical. Additional teeth in the temporary set are not so common, but when met with they are usually in this region and are almost always supplemental.

In a particular case reported by Mr. Ackery there were six incisors in the temporary set, two of which being supplemental, and these were followed by six incisors in the permanent set. The presence of an extra tooth in this region is only what we might expect, as here a tooth, either the second or third incisor of the typical mammalian dentition, has been suppressed.

It may be here interesting to note that in cases of cleft palate the presence of an accessory tooth is very common, and according to Albrecht, the cleft frequently runs between the two divisions of the premaxillary bone from which it is developed, the mesial part in some cases carrying two teeth and the distal one, which Sir Wm. Turner terms a cuspid. Some authorities account for the development of the second tooth in these cases by an increase of the blood supply.

Less frequently there is an extra bicuspid or occasionally two extra bicuspids, thus making up the full number of the mammalian premolars. More rarely do supplemental teeth occur in the region of the molars, but when such is the case it is usually the third molar that is so favored, the additional tooth being either external or internal to the arch. In a very few isolated cases are they met with in the region of the cuspid.

With this brief survey of supplemental teeth we now pass to the class of true *supernumerary* teeth, characterized by their irregular shape. They are in the permanent set of much commoner occurrence than those we have just been considering. Though of great diversity in shape, the usual forms are the conical and tuberculated. Of the conical, they are usually met within the median line of the maxilla, either between the central incisors or anterior or posterior to them. They are also found in the area of the molars, where they not infrequently appear as an accessory cusp, being geminated with one of the molars, this being at times symmetrical. They may be mistaken for enamel nodules. The commonest situation for the tuberculated variety of supernumerary teeth, in contradistinction to that of the conical, is on either side of the median line of the max-

illa, almost immediately behind the central incisors, the condition being usually bilaterally symmetrical. Though these are the usual situations for these two varieties of supernumerary teeth, yet it often happens that the one is found where the other might be expected, and *vice versa*.

As regards the origin of these teeth nothing is known, but Mr. Bland Sutton has pointed out that masses of epithelium, called epithelial pearls, occur where these are most often found, and he therefore suggests that the same tissue gives origin to both epithelial pearls and the supernumerary teeth.

The treatment is very simple. As a general rule they should be removed so soon as their character has been established. But in cases where they are geminated with other teeth, or they are not preventing the eruption of a tooth normal to the dentition, or cause no crowding or misplacement, or even if the patient be of a too advanced age to remedy the effect by removing the cause, always providing that they are not a source or liable to become a source of irritation to the tongue or cheek, there is no reason why they should not be retained. At times, when appearing in the palate and only partially erupted, they are very difficult or well-nigh impossible to remove without first cutting away a portion of the overhanging alveolus.

Supernumerary teeth are not by any means restricted to man, being met with in many domesticated animals, and in numbers of wild animals. Bateson is reported to have found them in eight per cent of jaws of gorilla, orang and chimpanzee, in phocidæ seven per cent, in otaridæ four per cent, in the wild canidæ three per cent, and in the wild felidæ less than two per cent, whilst in the jaws of the domesticated canidæ and felidæ as many as eight per cent and nine per cent respectively. In the skull of a gorilla in the Odontological Society's Museum there are two supernumerary teeth buried in the ascending ramus.—*Dental Record, May, 1899.*

* * *

ANOMALOUS TEETH. By I. Norman Broomell, D.D.S., Philadelphia. It has always been conceded that the dental organ of man, as well as those of the lower animals, are susceptible to much variation in form and structural arrangement, and that frequently this variation is so positive that the organ is pronounced anomalous in character. Just where the line of distinction between the normal

and abnormal should be drawn is a subject worthy of some consideration. Some authorities define the word anomaly as a marked deviation from the normal, while in the opinion of others a much broader meaning is accorded it; and we find all those conditions which are in themselves an irregularity from the typical structure or occurrence included under this category. Under the first definition a given structure or organ is accorded a wide field for its normal existence, while under the latter but slight deviation is necessary to classify it among the abnormal.

Upon first thought it would appear that the ability or inability of a tissue or organ to perform its special function should in a measure decide the question of the nature of its being, and no doubt to a certain extent this is true; but while the action of an organ or part of the body may by ordinary observation appear entirely satisfactory, it is only so at the expense of other organs or tissues, and these in course of time by this extra exertion become hypertrophied or in other ways pathological.

While this is especially applicable to those organs or tissues which have a wide range of function, it may with much force be applied to the dental organs and their immediate environments. Anomalous conditions in the teeth may originate in or be confined to one or more of the tooth tissues, in any of which the structural disarrangement may eventually result in the death or degeneracy of the part. Enamel malformation is of such a character that it may be observed upon the surface, either in the form of a multiplication of cusps, or by an extra development of the various ridges formed by pronounced folds of this tissue. But probably the most disastrous anomaly of the enamel, and one frequently responsible for the downfall of this tissue, is found in some defect of its structural arrangement other than those just referred to. In some instances the enamel rods of a given district, instead of being normally distributed by assuming a direction principally at right angles to the long axis of the tooth crown, are arranged without regard to the base or periphery of the tissue, and we have as a result an anomaly of structural form. The question of normal and abnormal enamel rod distribution now presents itself, because in certain locations, *i. e.*, summits of cusps, an arrangement of rods similar to that referred to is so common as to be a normal condition; while if a like distribution were found in other locations the tissue should properly be considered abnormal.

Malformed teeth, in respect to the number and form of the cusps present, are not alone confined to the enamel, but also to the dentin which first records the tooth form on its periphery. The number of cusps in the cuspidate teeth, particularly the lower molars, is so varied (all of which are accepted as normal, or at least seldom characterized as abnormal) that unless the conditions most frequently present be recognized as the correct anatomical form, that phase of the subject cannot be considered.

Anomalies in the general contour of the tooth crown are usually confined to the incisors and third molars, both the dentin and enamel contributing to the deformity. Here the defect is usually so pronounced that but little difficulty is experienced in properly classifying the organ. One of the most frequent variations in form met with in these locations is found in the peg or cone-shaped crown. If it were possible, it would be interesting to trace the development of such a malformation; but with our present knowledge of this process in general there is little doubt as to its origin, the enamel organ failing to fulfill its early and primary function of molding the tooth crown in the dentin papilla, the responsibility for this resting on the special cells composing it, as well as the so-called stellate reticulum, which I am led to believe exert a controlling influence over the form of the enamel cap.

While the organic defects of tooth crowns are numerous and varied, those which are confined to the roots are most frequent, in many instances interfering with the function of the organ. When a given peculiarity is confined to this portion of the tooth, it is frequently difficult to discriminate between the normal and abnormal. Certain teeth are recognized as normal when either a single root or two roots are present, and acceptance of this fact increases the difficulty of a proper classification of its peculiarities. One condition or the other should be considered as within natural order.

In very rare instances do we find the roots of the cuspidate teeth not more or less crooked; yet at the same time many decidedly crooked roots are considered within the natural law; while on the other hand roots with but little more deflection are classed as anomalous.

Marked flexions of roots or crowns, cases of fusion or concretion, are usually so positive in character that an anomalous condition is at once acknowledged. While tooth anomalies are usually

referred to as external, or as belonging to the hard tissues of the organ, a not infrequent location for such disorders is found in the pulp-cavity; in some instances the pulp is responsible for the condition, in others it may be attributed to the dentinal tissue. This cavity, normally following the external contour of the tooth, is subject to much variation in outline and capacity, regardless of those changes which are incident to the continuous process of dentinification.

In noting the progress of tooth dissections in college anatomical laboratory work, the writer has on more than one occasion observed a complete division of the pulp-chamber; horn-like processes penetrating the dentin in the direction of the occlusal surface in locations where they would be least expected, together with various other unnatural features.

It is seldom that we hear of an unusual number or a peculiar distribution of pulp-canals in an individual tooth-root referred to as an anomaly; but the acceptance of certain conditions in this connection, as within the natural law, compels us to recognize the above peculiarities as abnormalities.

* * *

ON THE CAUSE OF SO-CALLED PHOSPHORUS NECROSIS OF THE JAW IN MATCH-WORKERS. Stockman of Glasgow contributes to the *British Medical Journal* of Jan. 7, 1899, an article dealing with phosphorus necrosis. In every case he examined the pus was very fetid and was greenish, or brownish, or grayish in color. Attempts to make cultivations from the pus revealed the presence of staphylococcus albus, streptococci, and numerous other organisms, none of which could reasonably be regarded as the cause of the cario-necrosis.

It is well known that tubercle bacilli cannot be cultivated from pus, but on staining cover-glass preparations of the pus by the Ziehl-Neelsen method the bacillus tuberculosis was found in every case. As is usual in the discharge from tuberculous bone, the organisms were few in number and difficult to find, except on the closest and most careful examination. On centrifugalizing the pus and then examining the sediment they were more easily detected. Sometimes several cover-glasses had to be examined before any of the organisms were seen. Most of the bacilli were perfectly typical in appearance, others were small and thick, resembling the form

usually found in the urine. They were scattered about singly or in small clumps, or in groups of one or several dozen.

Inoculation of guinea-pigs with the pus did not infect these animals with tubercle, and hence the bacilli must be regarded as being either dead or as having almost entirely lost their infective virulence. It is now proved however, that tubercle bacilli in this condition are quite capable of setting up and maintaining local supuration and irritation for an indefinite time. Besides, they are assisted by the action of the pyogenic organisms with which the pus swarms. The condition of the tubercle bacilli is probably to be explained by the fact that all the cases which Dr. Stockman has had an opportunity of examining are recovering, and have been under treatment for very long periods with antiseptic mouth-washes, etc. The condition generally is exactly similar to what is seen in tuberculosis of the jaw in cattle and in tuberculous disease of other bones in man. The presence of the tubercle bacillus can hardly be regarded as fortuitous, seeing that it was found in every case, and its presence is held, so far as our present knowledge goes at least, to be proof positive of the tuberculous origin of any lesion.

If further proof of the tuberculous nature of the jaw diseases were wanted, it is to be found in looking through the accounts of post-mortem examinations of fatal cases. In most cases death occurs from tuberculosis of the lungs. Whether this is due to infection from the jaw tubercle, or whether the phosphorus fumes damage the lungs and make them more susceptible to direct infection, Dr. Stockman is unable to say.

General tuberculosis is also not uncommon, while tubercle of the abdominal glands and tuberculous ulcers of the intestines are almost invariable, these last arising certainly from infection by swallowing the pus. Abscess in the brain, purulent pleurisy, and tuberculous meningitis are also occasional causes of death. Hectic fever and emaciation always accompany fatal cases.

The part which the phosphorus plays in the process is not far to seek. The acid fumes (phosphorus and phosphoric acids) produced by its oxidation in the air have no effect on bone covered by gum or mucous membrane; but when they can penetrate to the bone directly through the aperture left by a decayed or extracted tooth, or any injury, they erode the bone, weaken its nutrition and resisting power at this small spot, and make it susceptible to infection by

tubercle bacilli. The bacilli having made good their foothold, spread slowly in some cases and with disastrous rapidity in others. Dr. Stockman says he thinks he is correct in saying that the great majority of workers in match factories have carious teeth, and yet only a very small portion of them become affected with cario-necrosis of the jaw—namely, those of them who, owing to their home surroundings or to individual predisposition, become readily infected by the tubercle bacillus. V. Bibra and Geist state that the disease may occur weeks or months after the patient has left the match factory, and in one of their reported cases the woman had actually been eighteen months away from the work before any symptoms began. This in itself is almost complete proof that the phosphorus fumes are only a predisposing cause, and that the disease depends on subsequent infection. It is well known that V. Bibra and Geist, and later Wegner, produced suppuration and cario-necrosis in the jaws of rabbits by injuring the periosteum and then exposing the animals to phosphorus fumes (on uninjured rabbits the fumes had no effect). The rabbits all died in from five to ten weeks' time, and were found to have tubercle of the lungs. Dr. Stockman experimented in a different way, as it is evident that these animals had become rapidly infected from laboratory cages in which they were kept. He got new wooden hutches made, placed them in a room where animals had not been previously housed, and kept them scrupulously clean. In the hutches pieces of phosphorus were placed in a mortar on damp earth (to avoid risk of fire) in such quantity that the cages were constantly filled with the fumes in much greater amount than can possibly occur in any factory. Four rabbits were then placed in the hutches after the periosteum and gum had been removed over a considerable portion of the upper and lower jaws in each. In one a tooth was loosened in addition, the operations being all performed under chloroform. They seemed to suffer no inconvenience either from the operation or from living in the phosphorus-fume atmosphere. It has been very difficult to prevent the gum growing over the exposed bone, and after many weeks there is not the slightest trace of any jaw affection. The exposed surface of bone has become slightly eroded and rough, but whether from the action of the acid fumes or from that of the bacilli of the mouth it is impossible to decide.

The treatment hitherto pursued in cases of phosphorus jaw has

been to wash out the mouth with deodorant and antiseptic lotions, and wait until the necrosed pieces of bone come away. This is always extremely tedious, and may last many years. In extreme cases the whole lower jaw, or half of it, or parts of the upper jaw, have been excised. Sometimes by so doing the whole of the infected portion may be removed, but frequently the disease has again broken out in a neighboring part of the bone. It is evident however, that early operative interference is called for, and that the original tuberculous focus at the root of the tooth should be removed at once.

As regards prophylaxis, there is absolutely no risk so long as the bone remains protected by gum, and even when carious teeth are present the entrance of the bacilli can be prevented by careful stopping. Efficient ventilation of the workshops will dilute the acid fumes arising from the phosphorus, and make them less active in injuring exposed bone. The infection with the tubercle bacilli is a matter quite apart from the factories and cannot be controlled either by state regulations or workshop rules. It is acquired—as other tuberculous affections are acquired—by certain persons and not by others, and owing to the present all-pervading frequency of the organism, persons with exposed bone eroded by acid fumes, and living under bad hygienic conditions, are very apt to become infected. Whether the fumes also weaken the mucous membrane of the lung alveoli and predispose to pulmonary phthisis among persons employed in match factories, Dr. Stockman says he has no information which will enable him to decide. It is just possible that actinomyces or other organisms may also occasionally lodge in the weakened bone and lead to caries and necrosis, but in those cases which he has hitherto examined he has found only the tubercle bacillus.—*Therapeutic Gazette*, April, 1899.

* * *

FORMALDEHYD IN DENTISTRY. By Dr. George T. Baker, Boston. Read before American Academy of Dental Science, December 7, 1898. Formaldehyd (CH_3O) is not a new product, but is one whose properties and uses are not at present fully understood. For a number of years it has been known that it was a most powerful germicide, antiseptic, disinfectant, and at the same time comparatively harmless to the higher forms of life. In addition to these qualities it is a very diffusible gas, and for this reason has been adopted by almost all the large cities for disinfection of dwellings

and their contents after cases of infectious diseases. It is also used in the preservation of foods. One part formaldehyd in thirty-two thousand is said to preserve milk for several days. Gelatin when mixed with formaldehyd is insoluble in boiling water. This fact is useful in photography. The fact that water absorbs the gas readily to the extent of a forty per cent solution renders it easy of application as a disinfectant in the fluid form. It is this aqueous solution that is found in the market, and it can be mixed with water to form any degree of strength desired.

The different uses to which it has so far been put and the strength in which it seems best adapted to exert its antiseptic and hardening powers are given in a table by F. J. C. Bird (*Pharmaceutical Journal*). The one part of formaldehyd in this table represents two and one-half parts of the full strength, or forty per cent solution of commerce. A solution of formaldehyd—1:250,000 kills anthrax bacilli. 1:50,000 prevents the development of typhus bacilli, etc. 1:32,000 preserves milk for several days. 1:25,000 forms a useful injection in leucorrhea, etc. 1:20,000 preserves wines, weak alcoholic liquids and beer; also milk for several weeks. 1:4000 recommended for moistening paper used to cover jam, etc. 1:3200 for rinsing dairy vessels, etc. 1:2500 destroys the most resistant microorganism in one hour. 1:2000 for rinsing casks and vessels intended for liquids liable to fermentation. 1:500 as a mouth-wash. 1:250 to 200 as a general disinfectant solution for washing hands, instruments, etc., in surgery, spraying in sick-rooms, as a deodorant. 1:160 to 100 hardens microscopic tissues, which should be immersed for a considerable time to give the best results. 1:1000 in lupus psoriasis and skin-diseases. 1:50 to 25 sterilizes surgical catgut, silk, etc., by steeping. 1:25 for quickly hardening and preserving for microscopical sections; longer immersion in a weaker solution gives better results. 1:10 for hardening very firm tissues in pathological and histological work. 1:5 for hardening firm tissues in such work. 1:2½ for hardening soft tissues for the same purpose.

The fact that formaldehyd is non-poisonous and has no odor of its own but what is easily dissipated makes it useful in many different ways. We have so many products useful in dentistry as germicides, disinfectants, antiseptics and deodorants, that it may seem unnecessary to add to the list, but formaldehyd seems to possess qualities that in some cases recommend it above all others.

For sterilizing instruments it seems to be of great value. It is efficient, neat, quick and inexpensive. The instruments may be immersed in a solution of formaldehyd, but a far better way is to expose them to the gas. Since the warm, dry gas does not attack metal or injure in any manner the most delicate material, all sorts of instruments can be easily and quickly sterilized. This includes the handpiece of the dental engine, rubber-dam holders, napkins, operating-coats, in fact, everything connected with the office. Drs. Reik and Watson, whose work is reported in the Johns Hopkins Hospital *Bulletin* (December, 1897), have experimented in this direction, and after giving their work in detail they state that "instruments can be sterilized in a small chamber in from ten to fifteen minutes, using respectively five or three grains of paraform to the cubic foot of space."

To corroborate the above, we have the report of Elmer G. Horton, B.S., from the laboratory of hygiene, University of Pennsylvania. Mr. Horton took chisels, excavators and burs, proved them sterile, infected them from cases in the operative clinic of the department of dentistry, placed them in a sterile tube, and dried them in an incubator for three hours. Those infected instruments were then exposed to the fumes of formaldehyd from ten to fifteen minutes. After explaining the results in detail, Mr. Horton says: "We conclude that infected dental instruments can be disinfected without injury in a closed space of less than one cubic foot, by an exposure of fifteen minutes to the formaldehyd gas generated from a pastill containing five grains of paraform, by heating the pastil over a proper alcohol lamp." These and other experiments all prove that in formaldehyd we have a very desirable product and one that for many purposes in dentistry is bound to replace other inferior and objectionable disinfectants.—*International, April, 1899.*

* * *

IODOFORM AND ITS USES IN DENTISTRY. By William Guy, F.R.C.S., L.D.S., Edin. Chemically iodoform is the analogue of chloroform, I_3 replacing H_3 in the molecule of marsh gas. CH_3 —chloroform having then the formula $CHCl_3$, iodoform that of CHI_3 . In its properties the analogy to chloroform is not so well marked; but iodoform is undoubtedly a local anesthetic, although its analgesic effect is not to be compared to that of the chlorin compound.

It is obtained by the action of iodine on alcohol, in the presence of carbonate of potassium and water; and it comes to us a fine powder, which may be crystalline (six-sided prisms) or amorphous. It is a disinfectant and a deodorizer, and in the treatment of open wounds its healing and soothing powers are well known. If its virtues be ascribable to iodine it should be noticed that the local action of iodoform is distinctly sedative, while that of iodine is irritant.

Now, although its value as an antiseptic has been clinically proved beyond all possibility of doubt, we have to confront the anomaly that on laboratory cultures of various popular bacilli and bacteria it has no fatal effect. Various theories have been put forward to account for this irregular state of affairs. Some hold that in wounds, etc., at the body temperature the iodoform is split up, iodine being liberated—to the iodine thus set free is attributed the antiseptic action. It is supposed again that in the presence of certain bacteria the same phenomenon occurs, and the inert iodoform sends forth the bactericidal iodine. But this should be susceptible of confirmation by laboratory experiment; as it is not, the surmise that iodoform acts antiseptically only at the moment of its own decomposition must still remain a mere surmise.

The supposition that while iodoform of itself cannot and does not injure the germs, it prevents their multiplication by sterilizing the soil or media to which it is applied, sounds feasible. But while we await an authoritative explanation of the *modus operandi*, it is abundantly clear that wounds are prevented from becoming septic if the application of iodoform precedes the entry of septic germs, and that asepsis is well maintained by the aid of this drug. It is reputed specially to have a modifying action on the syphilitic virus and on gonorrhea; also to have a restraining influence on the formation of giant cells.

Iodoform has thus a wide sphere of usefulness in pure surgery. In dentistry I believe its intelligent and scientific use would firmly establish it as one of our most valuable medicaments. I believe with many practitioners it has fallen into disrepute, and several have told me they now never use it—do not believe in it, and so forth. I attribute this very much to the circumstance that it was for long and is still taught that it should be used with eucalyptus oil in which, as in other volatile or essential oils, it is partially soluble, or in a saturated ethereal solution.

Eucalyptus oil is of all oils the least suitable for use in the teeth, and should in my opinion be banished from our dental materia medica. Its use in teeth, or pulps, or in root-canals, is so frequently followed by inflammation of the soft structures to which it can gain access, or to which it is applied, that a pulpitis or periodontitis is an almost constant sequela of its use. And I am certain that in many a case where a tooth which, after having the pulp cavity and root canals carefully opened out, disinfected, cleansed, and filled with an iodoform root-filling, has nevertheless had to be extracted, the blame has been laid to the door of the iodoform, whereas the whole failure was due to its being used in eucalyptus oil (or ether) as a vehicle, or in cotton wool soaked in eucalyptus oil. One word in passing on cotton wool. Why does everybody use the absorbent cotton wool, the non-absorbent being manifestly the better variety for our purposes? [It depends on the purpose. For drying cavities or draining off serous or purulent fluid from a root-canal, for instance, we think Mr. Guy would prefer the absorbent variety.—*Ed. Record.*]

The objection to the etherial solution is that decomposition occurs in it, and you get a great preponderance of free iodine present, which is an irritant, not a sedative.

The use of iodoform wax as a root-filling I also condemn, as I should the use of any substance the physical condition of which at ordinary body temperature was not a stable one.

I use iodoform myself largely, and as follows: (1) For pulp capping in cases of minute exposure. The iodoform is applied on a tiny pad of cotton wool, first dipped in an alcoholic solution of perchlorid of mercury, next in copal varnish, finally in iodoform powder. This is placed on the exposure, when the varnish readily holds it in place. It is then dried off with hot air, a little cement is flowed over it and the filling completed. (2) As a root-filling I use floss silk sterilized with perchlorid, then dipped in copal varnish and coated with iodoform, which sticks well to the silk. It can be packed quite easily; and surplus varnish that squeezes out may be wiped away or smeared over the interior of the pulp cavity. The varnish should always be dry before any filling is superimposed. (3) In cases where the dentin appears to be peculiarly susceptible to decay, or in very soft teeth, or where I find only a thin layer of dubious dentin between the bottom of the cavity and the pulp, I am in the habit of varnishing the cavity and dusting in iodoform

while the varnish is sticky. (4) Immediately after opening the antrum of Highmore, having washed it out and taken my model, I introduce a firm plug of cotton wool, varnish and iodoform into the wound and leave it there till the next day, when I put in the obturator and plug. This I think is a valuable procedure. (5) In chronic empyema of the antrum the cavity is frequently packed with iodoform gauze, and iodoform is also sometimes insufflated. (6) In all ulcerated conditions of the oral mucous membrane iodoform is useful, but it is particularly so in specific sores. In cases where ulcers or perforations of the hard palate occur in patients wearing cases of teeth, the iodoform mixed with gum tragacanth may be applied on the palatal surface of the case. (7) Sinuses may be packed with iodoform.—*Dental Record*, April, 1899.

* * *

GLOSSITIS—A CASE IN CONSULTATION. By W. H. De Ford, D.D.S., M.D., Cedar Rapids, Iowa. Read before Chicago Dental Society. The case to which I call your attention this evening is a peculiar one. It is denominated glossitis for want of a better term, but it is glossitis only in the sense that it involves an inflammation in and an enlargement of the tongue. Macroglossia does not properly describe the condition nor does hemiglossia.

The patient, Mr. Chas. G., age twenty-six, a laborer, enjoying the best of health, with no history of venereal disease in himself or parents, called on Dr. H. L. Walker, of Cedar Rapids, Iowa, an eye, ear, nose and throat specialist, September 7, 1898. About six weeks prior to this visit his tongue commenced to swell and had gradually grown worse until work, eating and sleeping were impossible.

The first thing noticeable was imperfect enunciation. It was difficult to understand the patient on account of the enlarged condition of his tongue. The second thing noticeable, and that in a marked degree, was the offensive breath, which was almost past endurance. Visual examination showed the following condition: The middle and posterior third of the left side of the tongue was greatly swollen and inflamed, to a sharp demarcation along the median line. By digital examination on the dorsum of the tongue could be felt several hard nodules. On the side of the tongue opposite the second molar tooth was a good-sized cavity filled with decomposed food and broken-down tissue, with a muco-purulent, highly offen-

sive discharge. By syringing with warm water and by the use of a probe the cavity was fairly well cleansed. The index finger could now be passed into the opening an inch and a quarter to an inch and a half toward the root of the tongue, and the little finger quite a distance further. The cavity likewise extended toward the median line and the tip of the tongue. Upon closer examination six or eight smaller cavities were found to open into this larger cavity, being separated from each other by thin partitions.

On the dorsum, but practically on the under side of the tongue, were several little tubercles or pustules exhibiting yellow points or heads. Upon opening these a drop or two of pus would ooze out. These would disappear and others form in different parts of the tongue to take their place. This continued all during healing. One large pustule at the tip of the tongue was very persistent—continued to the last and always bled freely when opened. So far as could be noticed no systemic symptoms were present. Pulse was normal at all times. Pain was entirely local, with exception of the left ear, which was complained of for a night or two previous to first visit to Dr. Walker. It might have been well to have examined the pus or exudate, but the mixture with putrefactive organisms might have made it unsatisfactory also.

The case was treated with antiseptic solutions for ten days with little or no improvement. At this juncture of the case Dr. Walker thought perhaps the teeth might have something to do with the condition, and asked me to see the patient with him. Upon examination with the mouth-mirror we found a large cavity of decay on the lingual side of the lower second molar tooth, involving the grinding surface and the pulp chamber. The edges of the cavity were razor-like and dentated. The pulp of the tooth was putrescent, and in addition the pulp-chamber and the cavity in the tooth were filled with the fetid discharge from the tongue. I advised extraction and operated the same afternoon. The odor upon removing the tooth was something beyond my power to describe; in comparison with it the contents of an abscessed antrum are sweet. The patient expressed a great sense of relief at being able to move the tongue without experiencing the knife-piercing agony of several weeks' duration, when every movement of the tongue came in contact with the sharp edges of the tooth.

The antiseptic washing was continued, and in addition iodid of

potassium administered three times per day. The parts healed kindly and quickly. Last Sunday I saw the patient again in order that I might go over the case prior to preparing this report. I found that the right side of the tongue is now enlarged, but there is no tenderness on pressure and no pain at any time. Upon inquiry the patient responded that it felt altogether different from the left side when it first commenced to swell.

I have looked up various authorities and consulted a number of specialists, but have been unable to find a similar case. I can place it under no other head than that of phlegmonous or suppurative glossitis, the sharp edges of the carious tooth being the exciting cause. The unilateral characteristic, the enlargement, the deep cavities, all coincide with it.

The odor must be attributed to putrefactive changes; the peculiar muscular structure of the tongue might explain the somewhat slow course of the inflammatory process. The absence of a syphilitic infection and history of secondary lesions must exclude all thought of gummata of the tongue. Tuberculosis cannot be considered in this connection. As to this starting in a preëxisting lymph, angioma or cystic tumor, I do not regard it as probable. The enlargement was too sudden for tumor formation. This is certainly an unusual case. I believe the condition on the right side of the tongue is due to metastases.—*Review, April, 1899.*

* * *

NEW TREATMENT OF HEMORRHAGE. There are certain hemorrhages which even though profuse, can be readily controlled because they occur in places where mechanical means can be employed for their arrest; but there are other hemorrhages which spring from vessels so deeply situated that compression and ligature do not suffice to control them, and in their presence the physician only too frequently finds himself unable to do much for his patient. In this connection the papers which have been recently published in French literature concerning the value of gelatin and calcium chlorid or gelatin and sodium chlorid for the purpose of causing coagulation of the blood are of interest. One of the most recent of these papers dealing with the indications and contraindications to hemostasis caused by the action of gelatin is that of Paul Carnot in *La Presse Médicale* of Nov. 16, 1898. After calling attention to the fact that he made his first communication concerning this subject in 1896,

he goes on to mention the hypodermic injection of sterilized gelatin solutions for the purpose of increasing coagulability of the blood in general. He then points out that the local use of these solutions is exceedingly valuable in controlling capillary or oozing hemorrhage where compresses fail to produce the results desired, and that this substance often suffices when preparations of the iron and the acids fail. It is of course absolutely essential that the solution when it is injected shall be absolutely aseptic. Very commonly the gelatin has been dissolved in ordinary sea-water which has been filtered and sterilized. In other instances it is, as we have already indicated, dissolved in ordinary water to which calcium chlorid has been added, calcium chlorid having great power, as first pointed out by Wright of Netley, England, in increasing the coagulability of the blood. The solution that Carnot has employed among others is one composed of gelatin, 12 drams; chlorid of calcium, $2\frac{1}{2}$ drams; and water, 1 quart. Queyat has modified this to the extent of adding a small quantity of glycerin to the solution. Any advantages this glycerin may have as a solvent are, we think, more than counterbalanced by its physiological action, which ought really to contraindicate its introduction into a mixture designed for subcutaneous injection.

As the solubility of the gelatin is a good deal increased by the application of heat, and as heat also aids in making it fluid, it is well to sterilize it immediately before it is to be used, and then to employ it before it becomes thickened by cooling, care being taken of course, that it is not used so warm as to cause damage. It is claimed that when from one to two ounces of this solution is given under the skin into the loose subcutaneous tissues of the back or thighs it acts very speedily in causing coagulation at the bleeding point. When gelatin solutions are applied to exposed bleeding surfaces, care should be taken to protect these areas lest putrefactive changes take place in the gelatin after it is applied, and if the gelatin solutions are used in the nasal cavities to stop hemorrhage, such precautions must be carried out. Carnot then goes on to point out that there is some danger of producing hypercoagulability of the blood if the gelatin solutions are used too freely, and this possibility is to be considered as an argument against its too free employment. Indeed, Carnot believes that the free injection of both the gelatin and calcium chlorid in the presence of pressing hemorrhage may,

though it controls the hemorrhage, ultimately exert a deleterious influence upon the blood in general. In his opinion, therefore, the subcutaneous use of this mixture has certain disadvantages and ought not to be commonly resorted to. He thinks that the gelatin solutions are of the greatest benefit when applied locally, and that when it is necessary to give a hemostatic hypodermically calcium chlorid itself should be employed, as under these circumstances it is effective in aiding in the coagulation of the blood, but is not capable of causing hypercoagulability, since, as is well known, calcium chlorid when given beyond a certain point ceases to increase the coagulability of the blood and rather tends to exercise an opposite influence.

In this connection Deguy tells us, in the *Journal des Practiciens* of Nov. 12, 1898, that the subcutaneous injection of gelatin solutions is capable of producing the following disagreeable symptoms: A condition of fever may develop, ranging from two to three degrees above normal, and this may last for a day or two. It is apt to be present in the evening and not in the morning, and sometimes is accompanied by chills and insomnia. The local accidents which follow its injection may be divided into three parts—pain, due to the injection, of a burning character which is increased by pressure; second, a diffuse redness of the skin or pseudo-inflammatory process, violaceous in appearance, which disappears for a moment on pressure and then immediately returns; third, a diffuse induration of the tissues, having very much the same sensation as the induration due to anthrax. Usually this lasts a number of days. From what has been said for and against this method of using gelatin, it is evident that it may not be so valuable a hemostatic as we were led to believe when its usefulness was first suggested; or rather, the untoward effects of this treatment may more than counterbalance the good which it is capable of doing.—*Therapeutic Gazette*.

* * *

NEW TEST FOR COCAIN. By Dr. George L. Schaefer, London. There are two well-known tests for determining the freedom of commercial cocain salts from other coca alkaloids. These are the permanganate test for detecting cinnamyl-cocain and the ammonia test, popularly known as McLagan's test, for detecting the presence of the coca alkaloids which are resistant to permanganate. While it is generally admitted that the permanganate test is

sufficient to detect the presence of cinnamyl compounds, some chemists have expressed doubt regarding the value of McLagan's test. The writer has for some time been conducting experiments with the object of finding a substitute for McLagan's test which would allow of the rapid and accurate determination of the presence in cocain salts of the coca alkaloids not indicated by the permanganate test.

As the result of numerous determinations, I have devised a test based on the fact that the chromates of these alkaloids are much less soluble than cocain chromate, both in water and in water acidulated with hydrochloric acid. The relative solubility of the chromates in acidulated water is about 1 to 500 in the case of cocain chromate and 1 to 5000 in the case of residual alkaloidal chromates. I therefore offer the following as a simple and satisfactory method of determining the purity of cocain salts: 0.05 Gm. cocain hydrochlorid is dissolved in 20 C.c. of distilled water, mixed with 5 C.c. of a 3 per cent solution of chromic acid, and to the mixture 5 C.c. of a 10 per cent solution of hydrochloric acid is added. It is advisable to keep the temperature of the solution at 15° C. If the cocain hydrochlorid be pure a clear solution will result. If other than traces of foreign coca bases be present the solution becomes cloudy at once or in a few minutes, according to the amount of impurity present. It is advisable to make test side by side with a specimen of known purity for comparison. — *Pharm. Jour. April, 1899.*

* * *

SIMPLIFIED FRACTURE SPLINT. By Dr. Jules J. Sarrazin, New Orleans. Read before Southern Branch National Dental Association, Feb. 9-13, 1899. He described a splint for a fractured inferior maxilla. Having secured a good model of the upper teeth, and an accurate model of the lower teeth, break the lower cast at the place where the fracture exists, occlude the teeth and mount in an articulator. Make a simple rubber splint occluding perfectly with the upper teeth, and extending lower on the gum than the exposed necks of the teeth, making its edges that meet on the gum well rounded and polished. Try in the mouth and make sure that with the jaws closed and pressed together all parts will go in place nicely, and that the occlusion of the upper teeth and the splint will be perfect. Having ready sufficient bandage, that will not stretch, to wrap eight or ten times around the head and closed jaw, cheeks

and ears of the patient, rapidly mix oxyphosphate almost to a medium thick consistence, fill the inside of the splint with it, dry the lower teeth and jaw and insert the splint, bringing the splint and enclosed teeth to occlusion with the upper jaw. Bandage securely, fasten with safety pins and wait a little longer than necessary for the cement to thoroughly harden. The cement will have been forced between the proximal surfaces of the teeth, fastening the splint securely. At next sitting remove the bandage, trim off excess of cement and patient can masticate on the rubber occlusal surface; appearance will not be ungainly nor speech difficult.

Before inserting the splint, it should have been partially sawed in different places, so that when ready to remove after the case has healed, the ends of sawed lines can be easily continued with engine bur and splint removed in sections. The remaining cement between the teeth that is found difficult to remove may be treated with strong alkaline baths until it dissolves.—*Ohio Journal, April, 1899.*

* * *

HINT IN ORTHODONTIA. It sometimes happens that the second bicuspid is lost before the second permanent molars have erupted, and if neglected the latter would travel forward. It is frequently desirable to retain loose deciduous cuspids for some time, lest the bicuspid move too rapidly to the front and narrow the space for the forthcoming cuspid. In all cases where these teeth are lost it is advisable to insert a vulcanite plate, with thin piano-wire retainers, pressing gently against the obtrusive tooth. The vulcanite might occupy the space of the lost tooth, and should be cut away from time to time to accommodate the erupting tooth. Many an unsightly irregularity can in this simple way be prevented. A treatise might be written on the mechanical prevention of extreme irregularities. Some of the most interesting and successful cases in our practice were begun before the roots of the teeth, which were moved, were fully completed. In fact, the success of several noted cases was made possible only because the regulating was begun as early as the ninth year.—*Pacific Gazette, April, 1899.*

BRITTLE NAILS.—For many years I have recommended the use of lemon-juice. Keep one-half a lemon on wash-stand, and every time the person washes, put each finger into the lemon and use as little soap as possible. The lemon neutralizes the alkali and will restore the nails in a week.—*N. S. Tefft in Med. Brief.*

Letters.

BALTIMORE LETTER.

Dear Digest:

BALTIMORE, May 13, 1899.

What is the matter with Oriole? Is he moulting or nesting? Why doesn't he write? No, Oriole is not moulting; he has reached a season of indifference which comes even to birds, where one suit may be worn longer without disturbing the comfort of the wearer; when something else than fine clothes interests him. Nesting? No, his birdlings, already hatched, have reached an age (common, we are told, to the masculine gender) where they threaten to bring his gray hairs in sorrow to the grave.

No, there is nothing the matter with Oriole; his vegetative functions are going on at the usual rate; he has simply not written because he has been lost in wonder and painful surprise at the enormous and iniquitous combinations and monopolies which the creatures of his kind have been forming, and asking himself, "Where's a fellow going, and what's he going to do, and how's he going to do it, when the world busts through?" Turning over in his mind the answer of the conductor of a wrecked railroad train, to the question of a lady passenger, "What will become of us?" "That, madam, depends upon how you have lived."

Seriously, Oriole has contracted what might be termed a mild form of socialism. He sees visions—dark visions of down-trodden, unreasoning and vindictive creatures sweeping over the beautifully carpeted green, leaving it parched and trampled, crying, "Down with monopoly, down with trusts, down with syndicates, down with your so-called authority. Such combinations are not lawful. Give us fair dealing and a chance to breathe and work."

Oriole is not a pessimist nor has he indigestion; he just knows the meaning of the word legitimate, and he is obliged to recognize the fact, that while illegitimate actions, like illegitimate children, may have their origin associated with pleasurable impulses, the sorrowful day of reckoning will surely come, when even the birthmark of a noble sire will not entitle the offspring to come into an inheritance.

The legitimate offspring of justice, right, fair-dealing and fellowship are peace, contentment, prosperity and sanity.

In this hustling age, when consciences do not disturb, we doubt if a careful analysis of the mental and moral condition of the successful and unsuspected burglar would differ so much from that of the promoter and organizer of any of the thousand-and-one schemes and combinations so recently foisted upon the helpless and over-credulous people. Their watered stock is only so much swag, and no murder has been committed in getting it safely to cover. True, it may be desperate work to keep it hid, but at least now we are happy; let the future take care of itself, and it will. Not a day goes by when Oriole does not congratulate himself that he is not in business; that he is just a plain, humble, unsuspecting, gullible server of his kind, who enjoys his work and the opportunity it gives him to study and admire the virtues and good traits of his fellows.

Professional life is not to be compared to the life of a business man. We spend our time in honorable service, and the grateful appreciation of our patients is comforting; our consciences are not seared with the thoughts of a sharp deal or a clever transaction. We dam(n) pulpless teeth occasionally, and wish some of our neurotics were stirring fires in a warmer climate, but when the day's done, we are peaceful and happy, and our pockets, while not over plethoric, yet contain enough to make interesting and profitable our wives' rummaging.

Individually, we are beyond the reach of combinations, but when we come to think of our associate interests, can the same be said? We fear not. We hear mutterings of discontent among our educators, who object to the tribute demanded by the association which claims a right to dictate terms of existence.

If a little less of the monopolistic spirit prevails in the councils of this association it may exercise a vastly more helpful influence in educational circles. Oriole counsels temperance and patience.

Our local board has had its meeting for the examination of recent graduates. They all passed but one and he has another chance. One of the questions, to say the least, was unusual—it related to the chemistry of beer. One of the brightest boys wrote and subsequently erased, "Beer is composed of headaches, sour stomach, nausea, vomiting, cystitis, delirium tremens, and Bright's disease." If he had added, "and should never be used internally," we think the answer would deserve to be copied. At least it is only fair that the faculties of the dental colleges should give the matter some

attention; a chapter on beer should be added to the text-books. To allow students to gather information on such an important subject in a desultory manner is not only unfair, but from the above answer it might give offense to the brewers' congress, or call forth the wrathful invective of the editor of the *Wine and Spirit Gazette*. Another reason for having printed questions accessible to the teachers.

Are you coming down to our anniversary? It occurs in Washington on the 6, 7 and 8 of June. Everything promises well for a successful and profitable meeting and a good time, so bring some of the boys and come. We get a little out of patience with some of our young men because they will not try, but on the whole Maryland will be there. Won't you come?

Cordially,

ORIOLE.

X-RAYS AND DEATH.—The need of a scientific test of death has suggested the use of Roentgen rays, as the slightest movement of the heart blurs the skiagraph, and in Paris they have already been successfully used for this purpose.—*Med. Age*.

TO REMOVE PLASTER FROM VULCANITE, saturate a pellet of cotton with strong cider-vinegar and rub the surface coated with plaster, and all traces will be removed. I have tried several things appearing in dental journals to my disappointment, until the above proved most effectual.—*H. C. Heady in Western Jour.*

HOOR OF BIRTH AND OF DEATH.—From an analysis of 36,515 births and 25,474 deaths, in which the time of day was accurately noted, Dr. Rasovi (*Klinischtherap. Wochenschrift*, No. 43, 1898) concludes that the maximum number of deaths occurs during the afternoon hours (between two and seven o'clock), and the minimum in the hours before midnight. The time of the maximum number of deaths corresponds to the hours during which, in the healthy person, the pulse frequency and the body temperature are at their height. He attributes the fact that the maximum number of births takes place in the early morning hours to two causes: (1) During these hours the accumulation of CO_2 in the body reaches its height, because oxidation takes place slowly, and under the influence of bed-rest and warmth the CO_2 is slowly eliminated; and as a result of the diminished blood pressure at this time there is an accumulation of CO_2 in the uterine venous plexus. (2) The inhibitory action of the cerebral and spinal centers on the sympathetic system is less marked at night, so that the impulses of the latter are expended with greater effect. The inhibitory power of the central nervous system is at its height during the early afternoon hours, or at the time when births are least frequent. The writer also claims that the early morning frequency of asthmatic and epileptic attacks may be ascribed to the diminished inhibitory action upon the sympathetic system at this time.

The Dental Digest.

PUBLISHED THE TWENTIETH DAY OF EVERY MONTH

At 2231 Prairie Avenue, Chicago,

Where All Communications Should be Addressed.

Editorial.

WHO SHALL CONTROL—THE EXAMINERS OR THE FACULTIES?

This problem assumes gigantic proportions at this time, because the National Association of Dental Examiners, which is composed of representatives from the various state examining boards, has defined what will be required of the colleges in order to be recognized by the association. We print the rule in question, which was adopted Oct. 14, 1898:

RULE VIII OF THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

Section 1. Colleges desiring recommendation to the state boards by the National Association of Dental Examiners shall make application for such recommendation through the committee on colleges, on blanks provided for that purpose.

Section 2. Colleges, to be recommended by this association, shall require of students applying to them for matriculation a written entrance examination in the following studies:

English	{ Grammar.	{ Spelling.
	{ Composition.	{ Punctuation.
		{ Grammatical Construction.

Mathematics	{ Advanced Arithmetic.
	{ Algebra—through Quadratics.
	{ Plane Geometry.

Geography	{ Descriptive.	History	{ United States.
	{ Physical.		{ General.

Latin	{ Rules of Grammar, Declensions, Conjugations, Construction.
	{ Translation of Easy Prose.

Elementary Physics.

The candidate to make a general average of at least 75 per cent. In lieu of this examination, a certificate of graduation from a high school, college, or university; or an entrance certificate to the freshman class of the academic department of a college or university, may be accepted. The institutions, however, granting these certificates to be accredited as standard by the communities within which they are located. This rule to become operative at the beginning of the session of 1899-1900. In admitting students who have taken a partial course in other colleges to advanced standing—junior or senior classes—colleges to be recommended shall require evidence

from such students that their first matriculation was in accordance with the requirements under this rule governing the entrance examination.

Section 3. The statements set forth in the application of any college for recommendation shall be verified after investigation by the board of dental examiners of the state in which the college is located, or by other persons designated by The National Association of Dental Examiners, in case no such state board exists; and the commendation of such board shall be essential to such action.

Section 4. The state boards in connection with this association are hereby required to become informed of the character of the dental colleges located in their respective states, as to their equipment, facilities, and methods of teaching, and shall report annually to this association wherein they fail to comply with these requirements.

Section 5. Attendance of students upon three full courses of not less than six months duration each, in separate college years, shall be required before final examination for graduation.

Section 6. Each dental college desiring recommendation must have a teaching faculty composed of at least six individuals and teach the following branches: Operative Dentistry, Dental Pathology, Dental Prosthetics, Oral Surgery, Anatomy, Physiology, General Pathology (fundamentals), *Materia Medica* and Therapeutics, and General Surgery. Their students must also be taught the subjects of Chemistry and Bacteriology in laboratories adapted to the purpose, and under suitable instructors. That such college must possess, in addition, suitable lecture rooms, a well appointed dental infirmary, and a general prosthetic laboratory, and must furnish in them systematic instruction to its students.

Section 7. All recommended colleges must maintain these rules and conditions and any violation of them will cancel recommendation.

Note A. We consider it inadvisable for a member of an examining board to be connected with a dental college in any capacity whatever.

Note B. We suggest that each college conforming to these rules shall specifically so state, and publish in its annual announcement the actual preliminary requirements contained in section 2.

There has all along been great opposition by some members of the National Association of College Faculties towards the Examiners, and a disposition to ignore or deny the authority of state boards to prescribe the requirements of the colleges. We have always contended that the Examiners' Association was the proper organization to say what should be the requirements, and our belief has been greatly strengthened during the last two years, since it has been demonstrated to a positive certainty that the Faculties' Association is either unwilling or unable to raise the requirements to the proper standard.

When this latter organization was first formed, and for a number

of years thereafter, it bade fair to be a great power for good in the future standing of the dental profession, but alas, it did not come up to expectations. After great pressure had been brought to bear by the earnest men of the profession for a higher standard, the Faculties' Association finally agreed to a requirement for better education before entrance, the same to take effect the following year, but at the next annual meeting the promised advance was refused and the association was left without any adequate standard of requirements, and no assurance was given the profession that even the low standard would be enforced. The reason given for this backward step was, that the weak schools outvoted the strong ones that wished for the advance. There was a suspicion on the part of those who looked into the matter, that many of the schools clamored for a higher standard simply for effect, but in reality were opposed to the advance. At any rate, some of the very schools that condemned the action which prevented the promised reform, are now opposing with the utmost vigor the same requirements, which are those adopted by the Examiners' Association.

It became evident to all intelligent practitioners that some other controlling power must enforce the reform, and we are glad to see that the Examiners have now prescribed requirements, and also, that the great majority of the colleges have agreed to the same. Out of the forty-seven schools belonging to the Faculties' Association, thirty-four have cooperated with the Examiners, while only thirteen have refused to do so. It is a noteworthy fact that most of this minority are the schools which have had the largest classes, and while this is not proof positive that the big schools desire no action which will diminish the number of their students, it at least renders them liable to the charge.

We have thought it wise to discuss this important problem in its various phases in order that our readers may understand fully both sides of the question. It is contended by the colleges who refuse to recognize the National Association of Dental Examiners that, first, it is self-constituted and without legal authority; second, that the prescribed course is such that the small colleges could not live up to it, even though they agreed to; and third, that the Examiners have refused to cooperate with the Faculties' Association.

In answer to the first proposition—while the Examiners' Association is incorporated, it makes no claim to legal authority as an

association, and does not contemplate entering into court proceedings with colleges in individual states. The contention certainly cannot be made that such an organization is without great power for good, if properly conducted. Almost all the state boards belong to this association, and as they meet yearly for discussion and mutual improvement, and are thereby better prepared to arrive at some uniformity of action, both as to examinations and the enforcement of law, how can anyone say that the Examiners' organization is not invaluable.

The second objection, that the small colleges will not and cannot live up to the requirements, is a matter for future consideration. If it be found that any school agreeing to these requirements is not living up to them, it can readily be dropped at any time, and it seems to us that the plan proposed is the very best way to weed out undesirable schools.

In looking over the proceedings of both organizations, we are led to believe that the third contention is not borne out by the facts. The National Association of Dental Examiners did make a strong effort in the first place to secure the harmonious cooperation of the College Faculties' Association, realizing that the two should work together, but the hopelessness of expecting any cooperation was shown when the Faculties requested that the Examiners should agree to accept any rules which they might adopt, thus showing that they were simply trifling with the Examiners.

We believe that the thinking men of the dental profession will sympathize with and support the examining boards, because the latter are striving to remedy some of the existing abuses. The great majority of the dentists know that many more men are being graduated each year than can possibly make a living or be of service to the community; that every cross-roads has one or more dentists; that in consequence the poverty of the dental profession to-day is pitiful; that at least one-half of those who graduate never start in practice, as they find themselves wholly unable to make a success of it, through lack of ability and fitness or because of the overcrowded field; that the college has allowed these young men to waste three years of most valuable time and a large sum of money, through not weeding out the improper material at the start that the infirmaries in many of the schools are run to make money, rather than to educate the students; that some of the colleges are

controlled by the dental trust supply houses; that the infirmaries are not run for the benefit of the poor, as people abundantly able to patronize a dentist are admitted, and fees exacted from them which would amply compensate the young graduates; that patients paying such fees should receive proper service, which a student is of course not competent to give; and last but not least, that a great many young men in the colleges are thus practicing dentistry without a license.

These abuses are not laid at the doors of all colleges, for we know there are many reputable schools to which they do not apply. We will not go further into detail in this issue, but enough has been said to show the need of some controlling power, and we ask, what shall it be?

Notices.

MICHIGAN DENTAL ASSOCIATION.

The next annual meeting of this society will be held July 11-13, 1899, in the parlors of the Hotel Harrington, Port Huron. A cordial invitation is extended to all members of the profession. M. B. DENNIS, Sec'y.

COLORADO STATE DENTAL ASSOCIATION.

This society will convene in Denver, June 13-15, 1899. As there will be much of interest to come before the society, it is hoped that dentists from this and other states will avail themselves of the opportunity to attend.

SARAH MAY TOWNSEND, Sec'y, Denver.

NEW JERSEY DENTAL EXAMINING BOARD.

The summer meeting of the New Jersey Dental Examining Board will commence on Wednesday, July 5, at 88 Broad st., Elizabeth, N. J., at ten o'clock a. m. All preliminary credentials from applicants must be approved by the superintendent of public instruction and be in the hands of the secretary before June 20.

G. CARLETON BROWN, Sec'y.

ALABAMA DENTAL ASSOCIATION.

At the last meeting of this society the following officers were elected: President, P. R. Tunstall; First Vice-President, J. P. Corley; Second Vice-President, W. E. Proctor; Secretary, W. J. Reynolds; Treasurer, J. C. Wilkerson; Examining Board: R. B. Chapman, (to succeed himself); C. P. Whitney, Secretary; J. A. Hall, Geo. Eubank, J. H. Crossland; Executive Committee, T. M. Allen, R. C. Young, T. P. Whitby, R. B. Chapman; Press Editor, R. C. Young. The next meeting will be held at Mobile the first Tuesday in May, 1900.

MASSACHUSETTS DENTAL SOCIETY.

The thirty-fifth annual meeting of the Massachusetts Dental Society will be held in Hotel Oxford, 22 Huntington ave., Boston, June 7-8, 1899. There will be Papers, Clinics and Exhibits, and the whole promises to be of unusual interest to all. Please mark off the dates now so that you may be able to attend all the sessions. Programs will be sent about two weeks before the meeting.

EDGAR O. KINSMAN, Sec'y.

KANSAS STATE DENTAL ASSOCIATION.

The annual meeting was held at Topeka, May 2-4, 1899. Drs. L. P. Haskell and A. H. Peck of Chicago, and Dr. W. E. Griswold of Denver, were elected honorary members of the association. The following officers were elected: President, C. C. Allen; First Vice-President, R. Matthews; Second Vice-President, W. A. McCarter; Secretary, J. W. O'Bryon; Treasurer, S. J. Renz. The place for holding the meeting next year was left to the executive committee.

KENTUCKY STATE DENTAL ASSOCIATION.

The annual session of the above society was held at Cave City, May 16-18, 1899. The following officers were elected: President, Ed M. Kettig; First Vice-President, J. R. Pirtle; Second Vice-President, J. N. Jouett; Third Vice-President, W. W. Barnes; Recording Secretary, F. T. Gardner; Corresponding Secretary, L. F. Huffman; Treasurer, F. R. Wilder; Executive Committee, E. T. Barr, J. N. Clark, C. R. Shacklett, Louisville; Board of Censors, T. B. Howell, E. T. Rose, E. L. Sanders; State Board of Dental Examiners, C. G. Edwards, T. H. Harrington, J. Rees, J. C. Montgomery, J. H. Baldwin, Louisville, Sec'y.

ILLINOIS STATE DENTAL SOCIETY.

The Illinois State Dental Society at its annual meeting held in Chicago May 9-11, 1899, elected the following officers: President, J. M. Lawrence, Lincoln; Vice-President, Joseph Campbell, Bloomington; Secretary, A. H. Peck, Chicago; Treasurer, C. N. Johnson, Chicago; Executive Committee, E. H. Allen, Freeport; Superintendent of Clinics, J. E. Hinkins, Chicago; Librarian, H. A. Potts, Bloomington; Committee on Dental Science and Literature, A. W. Harlan, Chicago; Committee on Dental Art, H. J. Goslee, Chicago; Committee on Ethics, C. B. Powell, Jacksonville; C. H. McIntosh, Bloomington; M. R. Harned, Rockford.

MASSACHUSETTS BOARD OF REGISTRATION.

A meeting of the Massachusetts Board of Registration in Dentistry, for the examination of candidates, will be held in Boston, Monday, June 19, 1899. Candidates for examination in operative dentistry will report to the secretary at 9:30 a.m., at Harvard Dental School Infirmary, North Grove st., and come prepared with rubber dam, rolls and instruments. The theoretic examination will be held at Civil Service Rooms, State House, commencing

at 9 o'clock, Tuesday, June 20. All applications, together with the fee of \$20.00, must be filed with the secretary of the board on or before June 12, as no application for this meeting will be received after that date.

G. E. MITCHELL, Sec'y, Haverhill, Mass.

IOWA STATE DENTAL SOCIETY.

The annual meeting was held at Des Moines, May 2-4, 1899. The society is desirous of having some changes made in the dental laws, by which more rigid requirements will be imposed on candidates for certificates to practice dentistry in the state. The officers elected are: President, C. R. Baker; Vice-President, C. Thomas; Secretary, I. C. Brownlie; Treasurer, W. R. Clack. Twenty delegates were elected to attend the National meeting at Niagara Falls in August. The next annual convention will be held in Dubuque, beginning the second Tuesday in May, 1900.

I. C. BROWNIE, Ames, Sec'y.

HAYDEN-HARRIS MEMORIAL TABLET.

Some alumni of the dental department of the University of Maryland have thought it fitting that recognition be made of the founders of scientific thought and dental education of this country. A movement has been inaugurated within this institution which appeals to every member of the profession, but more particularly to its alumni. It is proposed to erect in the university a joint memorial tablet to Dr. Horace H. Hayden and Dr. Chapin A. Harris, who are now justly accorded their position as the fathers of dental science. An elaborate design for a mural tablet by Mr. Ernest W. Keyser, the American sculptor, embraces busts of Drs. Hayden and Harris, which were modeled from portraits and photographs furnished by their respective families. The portraiture of these busts is remarkably faithful, and the design has been accepted by the committee. It is a happy thought that the alumni of the school which was the first to encourage scientific dental instruction (dental lectures to medical students given by Dr. Hayden in this university, in 1837), should be the first to place in its time-honored halls a memorial tablet, not only to Dr. Hayden, but also to his brilliant collaborator, Dr. Chapin A. Harris. This statement is made to the alumni, and an appeal is made to their liberality.

JOHN C. UHLER,

ISAAC H. DAVIS,

CLARENCE J. GRIEVES.

} Committee.

LATEST DENTAL PATENTS.

- 30,560. Design—Tooth powder and brush holder, Charles A. Kirkwood, Chicago.
- 30,693. Design—Supporting piece or plunger for dental chairs, Enoch M. Fredericks, Chicago.
- 30,744. Design—Fountain spittoon bowl, Arthur W. Browne, New York, N. Y., assignor to S. S. White Dental Mfg. Co., Philadelphia.
- 623,469. Dental handpiece, John G. Hailer, Philadelphia.

- 623,751. Artificial tooth crown and backing, Cephas Whitney, Kingston, Jamaica.
- 624,015. Dental disk-holder, George B. Hakins, Norwood, N. Y.
- 624,137. Dental engine, Claison S. Wardwell, New York.
- 624,425. Dental operating chair, Axel F. Bogren, Malmo, Sweden.
- 624,605. Alloy, Wm. D. Allen, Huntsville, Ala.
- 624,722. Tooth-crown holder, Wm. O. Allen, Billings, Montana.
- 32,801. Trade marks—Antiseptic and a remedy for certain named diseases, Dr. A. H. Keller Chemical Co., Sioux Falls, S. D.
- 32,842. Medicinal antiseptic lotion for certain named diseases, Electrozone Co., New York.
- 32,848. Disinfectant, Jules Brissonnet, Paris, France.
- 32,849. Disinfectant, Jules Brissonnet, Paris, France.

NATIONAL DENTAL ASSOCIATION.

The annual meeting of the National Dental Association will be held in the ball-room of the International Hotel, at Niagara Falls, August 14, 1899.

A railroad rate of one and one-third fare on the certificate plan will be obtained; also reduced rates on C. & B. and Northern Transportation S. S. lines. It is suggested that members living at a considerable distance organize parties, and thereby be enabled to secure lower rates from railroad companies.

Following is a list of hotels: Cataract House, \$3 to \$4 per day. International Hotel, \$3 to \$4 per day. Kaltenback Hotel, \$3 per day. Imperial Hotel, 2.50 to \$4 per day. Columbia Hotel, \$1.50 to \$2 per day. Temperance House, \$1.50 to \$2 per day. Niagara Falls House, \$2 per day. Niagara House, \$2 per day.

Dr. M. O. Cooley, of Niagara Falls, N. Y., will engage rooms and answer any questions regarding local arrangements for the meeting. Definite meeting places for sections will be announced later.

It is the wish of the officers of the association that members make special efforts to be present at section meetings, on account of the unusual number of valuable papers which must first be passed upon by the section to which they properly belong.

Following is the preliminary program: "Porcelain Enamel Inlays," Dr. N. S. Jenkins, Dresden; "Orthodontia," (Illustrated) Dr. Edward H. Angle, St. Louis; "The Absolute Efficiency of the Controllers of the Market for Dental Cataphoresis," Dr. W. A. Price, Cleveland; "Dental Electricity," Dr. L. E. Custer, Dayton; "The Practical Side of It," Dr. S. S. Stowell, Pittsfield; "A Bastard Profession," Dr. E. P. Beadles, Danville; "Surgical Operations in Early Infancy for Palatal Defects," Dr. Truman W. Brophy, Chicago; "Cements," Dr. E. K. Wedelstaedt, Minneapolis; "The Reflexes of the Three Lower Molars," Dr. James Truman, Philadelphia; "A Review of Operative Dentistry for the Past Thirty Years," Dr. J. N. Crouse, Chicago; "Gomphosis," Dr. B. H. Catching, Atlanta; "Prognathism. Extraction and Delay versus Expansion and Early Attention," (Illustrated) Dr. R. Ottolengui, New York; "Some Phases of the Cement Question," Dr. W. V.-B. Ames, Chicago,

"A Study of Harelip and Cleft Palate," (Illustrated) Dr. Thomas Fillebrown, Boston; "Dies and Counter-Dies," Dr. Robert H. Nones, Philadelphia; "Phyorrhea Alveolaris," Dr. M. L. Rhein, New York; "Constitutional Deterioration the Cause of Dental Caries," Dr. Harvey, Battle Creek; "Oral Affections in Secondary Syphilis," Dr. W. C. Barrett, Buffalo; "The Physiological Relation of the Adult Tooth-Pulp to the Economy," Dr. C. L. Hungerford, Kansas City; "Etiology of Gnathic Abnormalities," Dr. A. H. Thompson, Topeka; "Some New Points in the Anatomy of the Face and Jaws," Dr. M. H. Cryer, Philadelphia; An Important Paper, by Dr. J. Leon Williams, of London.

SUBJECTS TO BE ANNOUNCED: Dr. W. Geo. Beers, Montreal; Dr. H. L. Ambler, Cleveland; Dr. Joseph Head, Philadelphia; Dr. John S. Marshall, Chicago; Dr. A. H. Peck, Chicago; Dr. R. H. Hofheinz, Rochester; Dr. G. V. I. Brown, Milwaukee; Dr. H. H. Johnson, Macon; Dr. C. Edmund Kells, New Orleans; Dr. L. M. Cowardin, Richmond; Dr. L. L. Dunbar, San Francisco; Dr. G. V. Black, Chicago; Dr. W. H. Whitslar, Cleveland; Dr. A. W. Harlan, Chicago; Dr. C. N. Johnson, Chicago; Dr. H. J. Goslee, Chicago; Dr. F. W. Low, Buffalo; Dr. T. P. Hinman, Atlanta; Dr. B. Holly Smith, Baltimore; Dr. M. C. Smith, Lynn; Dr. Edward C. Kirk, Philadelphia; Dr. W. Ernest Walker, Pass Christian.

A revised program, with reports from chairman of sections, will be issued later. Prominent members of the profession from abroad have been invited to be present.

The names of the gentlemen who have promised to present papers is a sufficient guarantee of the high character of the work which will be done at this meeting. The minor details will be carefully looked after, and all unnecessary and irrelevant matter eliminated, so that the business of the association may be transacted in a prompt and expeditious manner. It is hoped that the various state societies will send full delegations, and that all members of the association and reputable dentists in this country and Canada who are not members will show their interest in and loyalty to the National Association by attending this meeting.

H. J. BURKHART, President.

EMMA EAMES CHASE, Cor. Secretary.

[It should be borne in mind that all reports and papers must be passed upon and accepted by some one of the various sections before they can be read before the association; therefore the foregoing list represents only those papers which have been promised, and not necessarily those which will be read. In accordance with a resolution passed at the last meeting, two weeks before the meeting we shall furnish as complete a program as is possible for the sections to give before convening.

J. N. CROUSE, Chairman Executive Committee.]

NEW YORK STATE DENTAL SOCIETY.

At the thirty-first annual meeting of the above society, held at Troy, May 10-12, 1899, the following officers were elected: President, F. LeGrand; Vice-President, J. J. Hart; Secretary, W. A. White; Treasurer, C. W.

Stainton; Correspondent, R. Ottolengui. A leading feature of the meeting was the discussion on the question "How Best to Unify the Various State Dental Laws Throughout the Country?" Dr. Ottolengui suggested the following as a solution of the vexing problem: "First—That a single national committee shall arrange the examination questions for use by the state examining boards, and that a license granted by one state, a party to this agreement, shall entitle the holder to practice in any of the states so agreeing. Second—That identical questions shall be used by those states which could hold examinations simultaneously, but that the committee shall provide separate sets of questions, of equal grade, for such states as could not agree to simultaneous examinations. Third—Each state board, in addition to using the national committee's questions for the theoretical examinations, shall conduct a practical examination, the successful candidate, however, not to be compelled to pass another such examination when presenting his license to another state. Fourth—That each state, party to the agreement, shall pay a stated fee for its set of questions, the fee being higher where special questions are provided, the sum thus raised to be a remuneration to the committee for the arduous labor which would be entailed by this plan." The following resolution was offered by Dr. French, and upon its adoption was ordered sent to Governor Roosevelt: "*Resolved*, That the Dental Society of the state of New York looks with distrust upon special legislation exempting any class of physicians or dentists from the provision of the law which provides for their examination by the state board of examiners as a preliminary to their entrance upon practice. It believes such legislation mischievous in its tendency and as establishing a dangerous precedent."

News Summary.

GEO. W. STINE, Harrisburg's oldest dentist, is dead, at the age of 70 years.

CHAS. D. LIVSEY, a dentist, died at his home in Pittsburg, April 27, 1899, aged 31.

DR. LAWRENCE, a well-known dentist of Erie, Pa., died after a long illness, May 3, 1899.

CHAS. P. CARVER, a prominent resident and retired dentist of St. Augustine, Fla., died May 7, 1899.

B. E. WEEKS, a prominent dentist of Ellsworth, Wis., died April 27, 1899, while insane, at the age of 37.

THOMAS G. CARROLL, a well-known dentist of Catonsville, Md., died May 4, of paralysis of the heart, aged 42.

W. R. MCCOWAN, a well-known dentist of Georgetown, Ky., died of a cerebral hemorrhage April 28, 1899.

HARRIS DENTAL ASSOCIATION OF LANCASTER COUNTY met at Lancaster, Pa., May 4 and elected the following officers: President, B. R. Underwood; Vice-President, B. F. Witmer; Secretary, W. N. Amer; Treasurer, Dr. Hurst.

MORRIS FRAZEUR, a dentist, died at Ft. Worth, Tex., April 23, 1899. He came to that city from Philadelphia.

COLUMBUS (OHIO) DENTAL SOCIETY held its annual meeting May 1. The following officers were elected for the year: President, A. M. Harrison; Vice-President, F. R. Chapman; Secretary, Harry Cope; Treasurer, Dr. Hawley.

DETROIT DENTAL SOCIETY has elected officers for the ensuing year as follows: President, P. J. Collins; Vice-President, G. V. Watkins; Secretary, Karl M. Fechheimer; Treasurer, W. Cleland; Member of Board of Censors, J. L. Young.

LINCOLN DENTAL SECRETARIES ORGANIZE. — A board of dental secretaries was recently organized at Lincoln, Neb. The following officers were elected: President, Will C. McHenry; Treasurer, W. H. Allwine; Secretary, L. N. Wentz.

NORTHERN OHIO DENTAL ASSOCIATION recently elected the following officers: President, L. L. Barber; Vice President, F. W. Knowlton; Corresponding Secretary, W. T. Jackman; Recording Secretary, W. A. Siddall; Treasurer, D. A. Allen.

NEW YORK STATE SIXTH DISTRICT SOCIETY met at Binghamton May 3-4. The following officers were reelected: President, A. S. Barnes; Vice-President, M. O. Landon; Secretary, Frederick W. McCall; Treasurer, Edwin D. Downs; Censor, Frank B. Darby.

OKLAHOMA DENTAL ASSOCIATION held its ninth annual session at Guthrie, May 3. The following officers were elected: President, E. E. Kirkpatrick; Vice-President, T. F. Clifford; Secretary and Treasurer, A. C. Gage; Corresponding Secretary, M. L. McConn.

ST. JOSEPH (Mo.) ODONTOLOGICAL SOCIETY met May 6, 1899, and elected the following officers to serve the coming year. President, M. W. Steiner; Vice-President, C. M. Cobb; Secretary, L. L. McDonald; Treasurer, U. G. Crandal. Clinical Supervisor, F. P. Cronkite.

CENTRAL DENTAL ASSOCIATION of Northern New Jersey. This progressive organization held its regular monthly meeting and banquet May 15. Dr. S. A. Hopkins of Boston read a paper on "Practical Bacteriology," and Dr. John B. Hawes, of New York, opened the discussion.

WM. A. ROYCE died at his home in Newburgh, N. Y., April 27, 1899, from a general breaking up of the system due to advanced years. He was a dentist by profession and a one-time partner of Dr. L. S. Straw. He was one of the four gentlemen who in 1856 assisted at the formation of the Republican party.

SOUTHERN WISCONSIN DENTAL ASSOCIATION held its fifth annual session at Janesville, May 2-4, 1899. The officers for the ensuing year were elected as follows: President, F. S. Knapp; First Vice-President, C. T. Peirce; Second Vice-President, Adolph Gropper; Secretary, J. H. Reed; Treasurer, W. G. Hales. The next annual session will be likewise held at Janesville, beginning the first Wednesday in May.

EASTERN INDIANA DENTAL ASSOCIATION met at Marion, May 4, and the following officers were elected for the ensuing year: President, F. M. Sparks; Vice-President, H. M. Brown; Secretary and Treasurer, C. W. Orland. The association adjourned to meet in Rushville on the first Wednesday of May, 1899.

DENTAL PATIENT BECOMES INSANE.—Isaac Spurgeon, a manufacturer of Kokomo, Ind., became violently insane after leaving a dentist's office where he had a tooth extracted. On reaching home he attempted to shoot himself with a revolver and made a number of other ineffectual attempts toward self-destruction. He is now under guard.

LAKE ERIE DENTAL ASSOCIATION held its thirty-sixth annual meeting at Oil City, Pa., May 2-4, 1899. The following officers were elected for the ensuing year: President, G. B. Colt; Vice-President, A. Johnston; Treasurer, J. S. Heivly. Fifteen delegates were elected for the state convention. The society will hold next year's meeting at Cambridge Springs.

PLASTER FROM HANDS.—In removing plaster from the hands after the application of plaster casts, it would be well to remember the fact that syrup of lime is the strongest solution, and that the application of a little sugar to the hands will greatly assist you. The same rule applies to the removal of casts.—*Ga. Jour. of Med. and Sur.*

NEW YORK COLLEGE OF DENTISTRY held its thirty-third annual commencement May 15, 1899. Prof. F. D. Weisse, dean of the college, conferred the degrees on forty-one young men. The prizes were awarded by Prof. A. R. Starr. The gold medal was presented to Dr. Charles F. Rabel, Jr., and the second prize to Dr. Harry Bowman. The address of the evening was made by Rev. Percy S. Grant, D.D.

SUSQUEHANNA DENTAL ASSOCIATION concluded its session at Scranton, May 11, 1899. The following officers were elected: President, E. J. Salleda; Vice-President, R. M. Stratton; Recording Secretary, T. A. Thomas; Corresponding Secretary, Nellie M. Carle; Assistant Secretary, M. Nellie Keyser; Executive Committee, H. M. Beck, P. Williams and H. N. Young. It was decided to hold the next convention at Wilkesbarre.

INDIANA'S GOVERNOR MAY DECLINE TO APPOINT UNDER NEW DENTAL LAW.—The law creating the state dental board is said by good legal authority to be unconstitutional, for it provides that the governor shall appoint as members of the board persons named by the state dental association. The association is a private enterprise and the governor may refuse to make appointments under the law because of its alleged unconstitutionality.

J. M. PORTER, a prominent dentist of Denver, died May 7, 1899. He was born in Massillon, O., in 1849; graduated at the Ohio College of Dental Surgery in 1872, and in 1880 came to Denver. He has at various times been connected with educational institutions and examining boards, and at the time of his death was an instructor in the Colorado College of Dental Surgery. He was also a member of the Colorado State Dental Association and the Denver Dental Society.

DENTIST BLOOD-POISONED WHILE AT WORK.—While Dr. James B. Sharp, a Bridgeton, Pa., dentist, was extracting a tooth for a patient recently, he accidentally scratched a finger on the tooth. Blood-poisoning set in, causing first his finger and then his hand and arm to become badly swollen, and he has been very ill from the effects of it.

TOOTHACHE OF HUNGER.—In some persons hunger will excite markedly disagreeable sensations in the teeth. A case is published of a gentleman who while convalescing from typhoid fever was seriously annoyed by painful sensations in two of his molars whenever he became hungry. The pain was sufficient to rouse him from sleep, and could not be allayed except by the introduction of food into the stomach, when instant relief followed.—*Maryland Medical Journal*.

NARCOSIS BY ETHYL CHLORID.—Lotheisen (*Archiv fur Klinische Chirurgie*, 57 Bd., 4 Heft) reports 170 cases of narcosis by ethyl chlorid. The amount required for each narcosis varied between two and three drams. There was a stage of excitement in thirteen per cent of the cases. Complete narcosis was developed very quickly and lasted for from five to ten minutes. There were no sequelæ of note, except that eighteen cases vomited. There were no accidents.

PROJECTILE VOMITING.—"My experience with suggestion reminds me of a friend of mine in Indianapolis who went to Porto Rico. On board the ship a great many were sick, and one of the boys, a young Irishman, was sitting with his arm on the rail, with every indication of seasickness. My friend thought he would console him, and he went up to him and said: 'Comrade, you have a weak stomach.' 'A weak stomach? Oh, I don't know. I'm throwing about as far as any of 'em.'"—*Dr. George, Indianapolis*.

DENTAL BILL DEFEATED.—The appointment of Dr. Gibson to the Pennsylvania State Board of Dental Examiners was made under the provisions of a law that was still upon its passage, but which failed on third reading by a big vote against it. The purpose of the new law was to give the governor authority to make appointments without the recommendation of the state dental society, which is the provision of the act now in force. The senate seemed to be of the opinion that the provisions of the present law are wise and should be maintained.

"MUSIC HATH CHARMS," etc.—A correspondent sends the following festive effusion: It has been suggested that music might prove a useful adjunct (in some cases at least) where the usual routine treatment by medicine had not proved satisfactory. I venture to suggest the following well-known airs as being suitable for the cases enumerated—Retarded labor from inertia, "Coming through the rye." Chronic aphonia: "The lost chord." Melancholia: "The heart bowed down." Epilepsy: "Let me like a soldier fall." Cases of chronic deafness: "Come back to Erin." Pyrexia: "McCoolin." Cases of doubtful diagnosis: "Oh, dear, what can the matter be?" Scarlet fever: "The lads in red." Noises in the ears: "Tarara-boom-de-ay." Isolation cases: "I'm so lonely." Illegitimate pregnancy: "I have a silent sorrow here." Nervous depression: "Cheer, boys, cheer."—*Med. Press and Circular*.

CONSUMPTION OF QUININ IN AMERICA.—The statement is made that during the past year more than 125,000,000 grains of quinin have been consumed by American soldiers suffering from various types of Southern fevers. The official figures of the Treasury Bureau of Statistics show that there were imported last year into the United States 1,539,056,750 grains of quinin. As there were practically no exports of the article, this means something like twenty grains for every man, woman, and child in the country.—*Med. Record.*

CONSUMPTION AND CANARIES.—From my own observation, I believe that in many instances diseased caged birds, such as canaries, communicate tuberculosis to a serious extent among human beings. As about four hundred thousand canaries are reputed to be sold every year in the United Kingdom, and as it is stated that tuberculosis is one of the most common diseases of birds, it does not seem unlikely that the canary may have considerable influence in the distribution of tuberculous infection.—*Dr. Tucker Wise, The Hospital.*

ABSCESSSES OF THE TONGUE.—Morisot (*Revue hebdomadaire de Laryngologie*) after an extended study of acute abscesses of the tongue concludes as follows: 1. Some cases of suppurative glossitis should be studied separately. 2. They may be divided into two groups: A, circumscribed abscesses; B, suppurative and generalized glossitis of the anterior half. 3. The affection is rare. 4. Causes, traumatism, such as scratches, etc. 5. Idiopathic. 6. Prognosis is favorable. 7. Diagnosis is generally easy, although they may be confounded with cysts or syphilitic gummata. 8. If there is hope of resolution, buccal antiseptics is indicated; if pus forms, early opening.

TO PREVENT PLASTER FROM STICKING TO THE TEETH WHEN TAKING IMPRESSIONS.—An otherwise perfect impression is often spoiled by particles of the plaster adhering to the necks of the teeth when taking the impression. Slight defects of this kind may be "doctored," but never so accurately as when the impression is perfect. The trouble about this seems to be that the impression is removed from the mouth too soon. If the plaster be permitted to remain in place until it gets quite hard these imperfections will not occur. Use impression plaster, which sets promptly, and count from five to six hundred moderately slow from the time the plaster is placed in position.—*Theodore F. Chupein in Dent. Off. and Lab.*

bled to death.—The peculiar case of Arthur Shattuck of Gardner, who died at the Elliot hospital, has attracted widespread attention among the medical fraternity of Boston. On April 26 Shattuck came to Boston suffering from a badly ulcerated tooth, and was operated on by Dr. Thos. Fillebrown. From the time of the operation until May 2, when the man died, the wound in his jaw bled without intermission. Every expedient known to science was practiced to prevent the flow of blood and save the man's life. Such recognized authorities as Dr. Brewster, Dr. F. A. Rice and Dr. A. C. Porter, were consulted and called in on the case, to which they gave their undivided attention, but notwithstanding all the efforts made to save him Shattuck died.

OHIO GRAND JURY AFTER DENTISTS.—Prosecutor Harvey Keeler of Cleveland is carrying out the threat he made some time ago in regard to going after the dentists who were extracting people's teeth and selling new ones without the proper credentials. The prosecutor surmised that a number of dentists in town did not hold diplomas and had no right in the business. Dr. Bethel, general secretary of the Ohio State Board of Dental Examiners, recently conferred with Prosecutor Keeler regarding the prosecution of quack dentists. The grand jury has already investigated four cases of alleged violation of the dental registration law, and it is probable that a number of indictments will be returned against those practicing illegally.

PLATING ALUMINUM.—Aluminum objects may be plated with silver, gold, copper, or nickel, after being carefully cleansed with diluted potash or soda solution or diluted hydrochloric acid (1:10), rinsed in water, and electrolysed in the following baths at a temperature of 60 to 70 deg. C.:—*Silver*: Silver nitrate, 20 grams; potassium cyanid, 40 grams; sodium phosphate, 40 grams; distilled water, 1000 grams. *Gold*: Gold chlorid, potassium cyanid, sodium phosphate, of each 40 grams, dissolved in distilled water, 1000 grams. *Copper*: Copper cyanid, 300; potassium cyanid and sodium phosphate, of each 450 grams, dissolved in distilled water, 5000 grams. *Nickel*: Nickel chlorid and sodium phosphate, of each 70 grams; dissolved in distilled water, 1000 grams. —*Pharm. Post*, 32, 39.

IMPROVEMENT OF ADENOIDS AFTER ADMINISTRATION OF DIPHTHERIA ANTITOXIN.—Beciggeul (*Gazette Medicale de Nantes*) relates the case of a child, aged seven years, with large pharyngeal adenoids, who was admitted to the hospital for a diphtheretic angina. An injection of Roux's serum was given. After culture the diagnosis made was staphylococcus angina; it was not due to Löffler's bacillus. After the serum injection the adenoids constantly diminished, and the child, who before the angina required operation, could easily breathe by the nose. * * * Heurtaux has tried in a case of adenoids in a child the same treatment (injection of ten cubic centimeters of antidiphtheretic serum). The result was successful; the adenoids disappeared in three weeks and the deafness was cured.

TEETH OF THE ANNAMITES.—In the *Revue Scientifique* of Feb. 18, M. Paul D'Enjoy gives some account of the method of blackening the teeth practiced by the natives of Annam. All travelers, he says, on arriving in that country for the first time are astonished to find that the teeth of the natives are of a uniform lustrous black color, like black enamel. This unusual condition is not the result of chewing betel, although delusive statements to that effect are made by the natives for the purpose of misleading foreigners. The Annamites abhor white teeth and have been known to say that a European with a bushy moustache and white teeth eating a piece of meat resembles a hungry cat. The process of blackening the teeth is elaborate and tedious. After being well washed they are rubbed first with powdered coral and then with rice vinegar. In the next place the operator using special small brushes paints their entire surface with a mixture of honey, animal black, and powdered calambac (*bois d'aigle*) ground together. Several successive

applications of this kind are made every day and afterwards the person operated on has to keep his mouth open until the material dries. This substance becomes a kind of varnish which forms a protective covering but does not penetrate to the interior layers of the tooth. The natives assert that their remarkable freedom from toothache is due to this practice.

INFLUENCE OF HEREDITY.—Dr. A. L. Benedict says: 1. Much of what is commonly ascribed to heredity should properly be credited to infection, environment, or even chance. 2. True heredity deals with general and acquired traits, rather than with disease, which is essentially foreign to the organism. 3. On account of the vast number of ancestors involved, the introduction of fresh blood by intermarriage and the crossing of hereditary tendencies from one sex to another, there is, on the whole, a tendency to reversion to general characteristics and to purification from taints. 4. A disease to be hereditary must depend upon some intrinsic physiological or anatomical abnormality and not essentially on infection; if it manifests itself before the period of reproduction, the tendency must disappear either with the destruction of the family or by superior force of the normal tendencies; if it does not interfere with reproduction, it is still amenable to hygienic precautions. 5. The only intelligent knowledge of heredity must come from a close study of genealogy, carried on impartially and without unworthy incentives.—*N. Y. Med. Jour.*

HEMORRHAGE AS A SIGN OF CONGENITAL SYPHILIS.—In the course of the description of a case of hemorrhagic congenital syphilis appearing as a hemorrhagic vesicular eruption, Dr. William S. Gottheil calls attention to the importance of otherwise unexplainable bleedings in infants as symptoms of congenital lues. They may be the only mark of the disease, especially at first; but they are almost invariably accompanied by a diminution of the coagulability of the blood similar to that of hemophilia, and the case usually goes on rapidly to a fatal termination. Disease of the vascular walls is one of the commonest and best known effects of the syphilitic poison, leading to hemorrhagic discharges from the mouth, the bowels, the bladder, or the nose; to blood accumulations under the skin and mucosae, or in the serous cavities and internal organs; or finally, making the syphilitic eruption itself hemorrhagic. The author emphasizes the importance of remembering these facts in the treatment of infants who have hemorrhagic discharges or a hemorrhagic eruption the cause of which is obscure.—*Archives of Pediatrics*, June, 1898.

RHODE ISLAND SUPREME COURT OF DENTISTRY.—An important decision relative to the registration of dentists in this state was made May 8, 1899, by the supreme court. The court decides that any physician or surgeon who is registered under the state board of health is entitled to practice dentistry, regardless of the question of registration with the state board of dentistry. Judge Tillinghast says that the evident purpose of the general assembly in the passing of the act relating to the practice of dentistry was to protect the public from being imposed upon by persons who, while professing to be competent to extract or replace teeth by artificial ones, yet from want of instruction and skill in the art were wholly unfit to perform such a delicate and highly important function. The fact that physicians have first qualified

themselves generally for the practice of medicine and surgery in all its branches, and obtained a license to pursue such practice, must be held to entitle them to operate upon the teeth and jaw, as well as upon other parts of the human organism. "Dentistry is now a well recognized branch of surgery. A dentist is a dental surgeon. He performs surgical operations upon the teeth and jaw, and incidental thereto, upon the flesh connected therewith. His sphere of operations then, as before intimated, is included in the larger one of physician and surgeon. It has always been the custom in this state, and probably everywhere else, for physicians to treat ailing teeth, to extract teeth, and to perform various other professional services which technically come within the purview of dentistry. Physicians who reside in the country towns especially, have always been called upon to a greater or less extent for the performance of such services, and to now prohibit them from thus treating their patients would be a great source of inconvenience, and in many cases of extreme hardship and suffering to the latter, as well as an interference with the proper and legitimate functions of the former."

 INDEX TO ADVERTISEMENTS.

	PAGE		PAGE
American Hard Rubber Co.....	48	Harvard University—Dental Dept.....	54
Antidolar Mfg. Co.—Anesthetic.....	45	Hammond, John F.—Cement.....	32
Antitortus Chemical Co.—Anesthetic.....	24	Hall, Wm. R. & Son—Disks.....	46
Archer, Chas. S.—Dental Depot.....	24	Hisey Mfg. Co.—Anesthetic.....	24
Baltimore College of Dental Surgery.....	59	Indiana Dental College.....	56
Birmingham Dental College.....	53	Lambert Pharmacal Co.—Listerine.....	1
Blair Fountain Spittoon Co.....	41	Lowry, Dr. H. S.—Crowning Outfit.....	44
Burnham Electric Co.—Fan Motor.....	36	Manhattan Dental Co.—Platnoid.....	30
Carroll, Dr. H. M.—Retainers.....	46	Mexican Plantation Association.....	42
Chase Com. Plate Co.—Supplies.....	49	Mason, W. L.—Matium.....	33
Canton Surgical and Dental Chair Co.....	45	Morgan-Maxfield—Disk Mandrel.....	30
Central Dental and Chemical Co.....	29	McKesson & Robbins—Vapocain, Cover page 3	
Chicago Kindergarten College.....	55	Morgan, Hastings & Co.—Gold Foil, etc.....	50
Chicago College of Dental Surgery.....	60-1	Meyer, Dr. J. H.—Post-Graduate School.....	56
Chicago Dental Specialty Co.—Gas Outfit.....	51	Moore, E. C. & Son—Apron.....	31
Colorado College of Dental Surgery.....	32	Munn & Co.—Patents.....	25
Dartt Publishing Co.—Ledgers.....	47	National Medical Exchange.....	52
Dee, Thos. J. & Co.—Refiners.....	38	Northwestern University Dental School.....	62
Dentacura Co.—Tooth Paste.....	2	New York College of Dentistry.....	57
Dunn, Dr. J. Austin—Clamp.....	45	Ohio College of Dental Surgery.....	56
Detroit Dental Mfg. Co.—Specialties.....	43	Ohio Med. Univ.—Dept. of Dentistry.....	58
Dental Protective Supply Co.—		Palisade Mfg. Co.—Borolyptol.....	64
Adjustable Slip-Joint.....	6	Penna. College of Dental Surgery.....	68
Rubber-Dam.....	46	Phillips, Chas. H. Co.—Milk of Magnesia,	
Discounts.....	5Cover page 2	
Angle Attachments.....	7	Pope Mfg. Co.—Columbia Bicycles.....	27
Dental Engine.....	11	Rock Island Route.....	28
Fellowship Alloy.....12, 13 and colored insert		Rugg, Frank E.—Nickel Plater.....	30
Dual-Blade Burs.....	4	Russell Electric Mallet Co.....	29
Teeth.....19-23 and back cover		Saul, J. A.—Patents.....	29
Fellowship Broaches.....	3	Schering & Glatz—Eucain.....	39
Lithos Cement.....	10	Scivaleno Chemical Co.—Antidote.....	27
Cigrand's Intradental Bands.....14-15		Sears & Brown—Fusible Metal.....	31
Mail-Order Service.....	16	Snyder, Dr. F. L.—Disk.....	32
Philadelphia Branch.....	18	Spooner, Dr. F. B.—Cotton Trap.....	27
Repair Work.....	17	Twist, Dr. J. F.—Crowning Outfit.....	25
"No. 1" Handpiece.....8-9		Vanderbilt University—Dental Dept.....	54
Fairchild Chemical Laboratory—Sanitol.....	39	Wilson, H. B.—Patents.....	26
Frink & Young—Crowns.....	53	Webster Mfg. Co.—Blow Pipe.....	42
Amalgam and Cutting-Fluid.....	35	Weld, G. W.—Chemico-Metallic Method.....	49
Geeswein, F. W. Co.—Ruby Crystal.....	49	Weller Dental Supply Co.....	52
Gilbert, S. E.—Specialties.....	36	Wilcox, A. A. Laboratory—Cement.....	26
Goodrich, B. F. Co.—Rubber.....	42	Wenker, Dr. R. J.—Ledger.....	49
Goldsmith Bros.—Refiners.....	37	Western Reserve Univ.—Col. of Dentistry.....	54
Howard, C. T.—Strips.....	29		

The particles of food

which find lodgement in the interstices of the teeth and in the tooth structure, form a most suitable pabulum and very secure habitation for bacteria; consequently, the Dental Profession has subjected to very careful test the various antiseptic and disinfectant agents known to science, with the object of ascertaining their exact inhibitory or germicidal value, and their general adaptability to the practice of dentistry. In the researches by Professor Miller, of the Royal University of Berlin, to determine the most available antiseptic for the prophylactic treatment of the oral cavity, and for the preservation of the teeth, the action of Listerine was particularly noteworthy for the rapidity with which it acted upon the fungi of the mouth, and it was clearly demonstrated to be one of the most powerful, and the safest of the available antiseptic solutions.

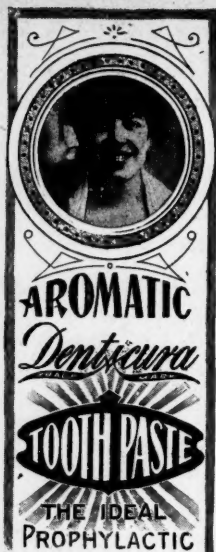
Listerine has proven a very useful agent in Dental Practice :

- To treat antiseptically all diseases of the oral cavity.
- To prescribe as a detergent prophylactic mouth wash.
- To cleanse and deodorize before operating.
- To wash and purify the mouth after extracting.

Dealers in drugs, everywhere, will promptly fill your prescriptions for Listerine, but in consequence of the prevailing evil—substitution—we request that an original package be ordered, thus assuring to the patient genuine Listerine.

Upon demand, we shall send you "Listerine in Dental Practice," a compilation of interesting reports descriptive of the antiseptic utility and general adaptability of Listerine to the dental art.

Lambert Pharmacal Co., Sole makers of **St. Louis.**
Listerine,



THE IDEAL PROPHYLACTIC.

Dr. J. LEON WILLIAMS, probably the best living authority on the subject, says: "In my judgment the greatest hope for the future, in the saving of human teeth, lies in the direction of prevention of decay by the use of Germicides."

A. C. HART, Ph. B., D. D. S., M. D., another eminent dental scientist, also declares that "he can preserve the teeth of his patients indefinitely by preventing the growth of bacteria in the mouth."

The only official investigation of the subject ever made by the dental profession conclusively demonstrated that the safest and most effective germicide adapted to Dental and Oral Prophylaxis is

Dentacura

TRADE MARK

DISINFECTANT.
ANTISEPTIC,
AND
DEODORANT.

FOR THE
MOUTH.
TEETH.
AND GUMS.

IT
CLEANSES
HEALS
AND
PRESERVES.

DENTACURA
INSURES
SOUND TEETH.
HEALTHY GUMS,
SWEET BREATH,
AND GOOD HEALTH.

Dentacura thoroughly destroys the activity, growth and multiplication of the lower forms of vegetable life. It is not only absolutely **non-toxic** and **non-irritant** in its properties, but exerts a wonderful alterative influence upon all diseased tissues, quickly restoring normal conditions. Dentacura is indeed what Dr. Arthur L. Swift declares it to be—"a revelation in dental therapeutics," and as Dr. J. Foster Flagg adds, "The results from which are eminently satisfactory." "It stands," says Dr. H. C. Scobey, "pre-eminently alone, and should command the attention and endorsement of every conscientious dental surgeon."

Literature and free samples may be had by addressing

Dentacura Company,

NEWARK, N. J.